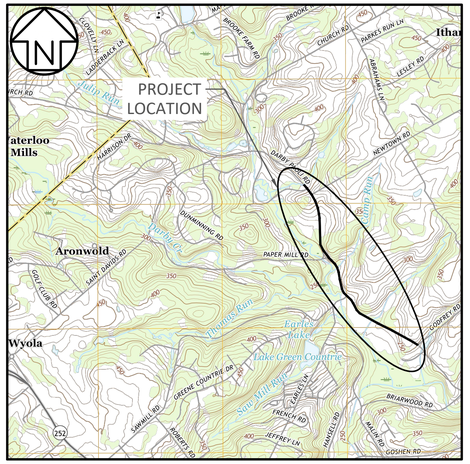
DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6–0	DELAWARE	SR 1015	–	1 OF 18
RADNOR TOWNSHIP				

REVISION NUMBER	REVISIONS	DATE	BY

LOCATION MAP



MAP SCALE: 1" = 2000 FT

DRAFT

100% E&S SUBMISSION
RADNOR TOWNSHIP

DRAWINGS
FOR
CONSTRUCTION
OF THE
DARBY PAOLI TRAIL
SEGMENTS 1 – 4
ALONG
STATE ROAD 1015 DARBY PAOLI ROAD
IN DELAWARE COUNTY

FROM STA 100+00.00 TO STA 164+12.91 LENGTH 6412.91 FEET 1.215 MILES

SHEET NO.	DRAWING TITLE
1	E&S COVER
2	INDEX MAP
3	E&S CONTROL NOTES
4	E&S CONTROL – STA 100+00 TO 106+00
5	E&S CONTROL – STA 106+00 TO 113+00
6	E&S CONTROL – STA 113+00 TO 121+00
7	E&S CONTROL – BRIDGE
8	E&S CONTROL – STA 121+00 TO 128+00
9	E&S CONTROL – STA 128+00 TO 136+00
10	E&S CONTROL – STA 136+00 TO 144+00
11	E&S CONTROL – STA 144+00 TO 151+00
12	E&S CONTROL – STA 151+00 TO 160+00
13	E&S CONTROL – STA 160+00 TO 164+12.91
14	E&S CONTROL DETAILS – SHEET 1
15	E&S CONTROL DETAILS – SHEET 2
16	E&S CONTROL – SOFT TRAILS SHEET 1
17	E&S CONTROL – SOFT TRAILS SHEET 2
18	E&S CONTROL – SOFT TRAILS SHEET 3

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SCALE
HORIZONTAL 0 25 50 FEET
VERTICAL 0 5 10 FEET

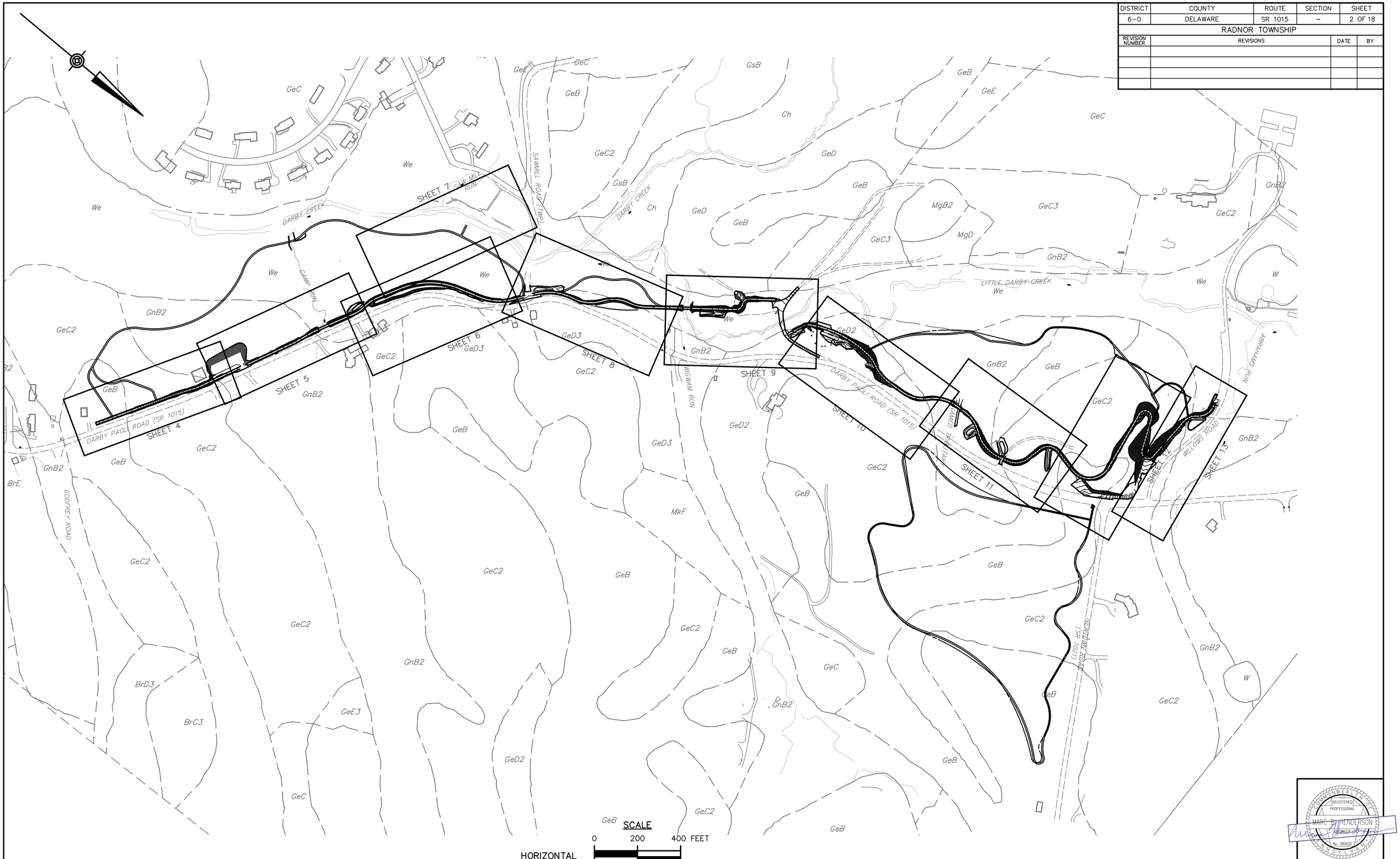
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MARC B. HENDERSON ENGINEER No. 080420

meliora Civil, Water Resources, and Structural Engineering	MELIORA DESIGN 259 MORGAN STREET PHOENIXVILLE, PA 19460 610.933.0123 WWW.MELIORADESIGN.COM	DESIGN BY: JDR DRAWN BY: JDR CHECKED BY: MBH	JOB NO: 17041 DWG: 1 DATE: 01/31/2020	RADNOR TOWNSHIP 301 IVEN AVENUE WAYNE, PA 19087–5297 (610) 688–5600	DARBY–PAOLI TRAIL SR 1015 RADNOR TOWNSHIP DELAWARE COUNTY

E&S COVER

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6–0	DELAWARE	SR 1015	–	2 OF 18
RADNOR TOWNSHIP				

REVISION NUMBER	REVISIONS	DATE	BY



COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MARC B. HENDERSON
ENGINEER
No. 080420

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INDEX MAP

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6–0	DELAWARE	SR 1015	–	3 OF **18**
RADNOR TOWNSHIP				

REVISION NUMBER	REVISIONS	DATE	BY

GENERAL EROSION AND SEDIMENT CONTROL NOTES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE CONTRACTOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON–SITE PRECONSTRUCTION MEETING.
3. STATE LAW REQUIRES A MINIMUM THREE DAY BUSINESS DAY NOTICE, BUT NOT MORE THAN TEN BUSINESS DAYS, PRIOR TO EARTH DISTURBANCE. ORDER A UTILITY MARK OUT UTILIZING THE PENNSYLVANIA ONE CALL SYSTEM. SITE UTILITIES MUST BE FIELD LOCATED AND MARKED BEFORE THE START OF ANY SITE WORK, INCLUDING ALL PRIVATE UTILITIES. CONFIRM LOCATIONS AND INVERTS.
4. THE RADNOR TOWNSHIP ENGINEER SHALL BE NOTIFIED FORTY–EIGHT (48) HOURS IN ADVANCE OF THE COMMENCEMENT OF ANY CONSTRUCTION OF INSTALLATION OPERATION, IN ORDER THAT PROVISION MAY BE MADE FOR INSPECTION BY THE TOWNSHIP AND THE AUTHORITY.
5. CONSTRUCTION AND INSTALLATION OPERATIONS SHALL ALSO BE SUBJECT TO INSPECTION BY TOWNSHIP OFFICIALS DURING THE PROGRESS OF THE WORK AND THE SUBDIVIDER, DEVELOPER, OR BUILDER SHALL PAY FOR ALL INSPECTIONS.
6. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
7. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
8. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
9. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
10. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 10 FEET. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER.
11. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
12. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
13. ALL OFF–SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
14. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP–001 MUST BE RETAINED BY THE OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
15. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
16. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE PROPERLY MAINTAINED. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
17. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
18. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
19. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
20. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES — 6 TO 12 INCHES ON COMPACTED SOILS — PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
21. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
22. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
23. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
24. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
25. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
26. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
27. SEDIMENT BASINS AND/OR TRAPS SHALL BE KEPT FREE OF ALL CONSTRUCTION WASTE, WASH WATER, AND OTHER DEBRIS HAVING POTENTIAL TO CLOG THE BASIN/TRAP OUTLET STRUCTURES AND/OR POLLUTE THE SURFACE WATERS.
28. SEDIMENT BASINS SHALL BE PROTECTED FROM UNAUTHORIZED ACTS BY THIRD PARTIES.
29. ANY DAMAGE THAT OCCURS IN WHOLE OR IN PART AS A RESULT OF BASIN OR TRAP DISCHARGE SHALL BE IMMEDIATELY REPAIRED BY THE PERMITTEE IN A PERMANENT MANNER SATISFACTORY TO THE MUNICIPALITY, LOCAL CONSERVATION DISTRICT, AND THE OWNER OF THE DAMAGED PROPERTY.
30. UPON REQUEST, THE APPLICANT OR HIS CONTRACTOR SHALL PROVIDE AN AS–BUILT (RECORD DRAWING) FOR ANY SEDIMENT BASIN OR TRAP TO THE MUNICIPAL INSPECTOR, LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
31. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
32. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON–GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
33. WEED–FREE HAY OR STRAW MULCH MUST BE APPLIED AT 3.0 TONS PER ACRE. STRAW MULCH SHALL BE APPLIED IN LONG STRANDS, NOT CHOPPED OR FINELY BROKEN.
34. TEMPORARY SEEDING SHALL CONSIST OF OATS (AVERE SATIVA) IN SPRING AND/OR SUMMER, AND WINTER WHEAT IN FALL AND/OR WINTER. SEED MIXED SHALL CONTAIN A MINIMUM OF 85% LIVE SEED. APPLICATION RATE IS TO BE 30 LBS. PER ACRE OR 10 LBS. PER 1000 S.F.. TEMPORARY SEEDING SHALL BE APPLIED TO THOSE AREAS THAT ARE A POTENTIAL EROSION RISK AND THOSE AREAS WHERE CONSTRUCTION ACTIVITIES HAVE ENDED.
35. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON–VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
36. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
37. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OPERATOR SHALL CONTACT THE ENGINEER FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
38. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
39. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
40. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT–LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

RECYCLING PROGRAM

1. THE CONTRACTOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS 25 PA CODE 260.1 ET SEQ., 271.1 ET SEQ., AND 287.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP OR DISCHARGE ANY BUILDING MATERIAL OR WASTES. CONSTRUCTION WASTES INCLUDE, BUT ARE NOT LIMITED TO, EXCESS SOIL MATERIALS, BUILDING MATERIAL, CONCRETE WASH WATER, SANITARY WASTES, ETC., WHICH COULD ADVERSELY IMPACT WATER QUALITY.

OPERATION AND MAINTENANCE

1. THE CONTRACTOR IS RESPONSIBLE FOR THE OPERATION & MAINTENANCE OF ALL E&S AND STORMWATER MANAGEMENT FACILITIES DURING CONSTRUCTION. UPON FINAL APPROVAL AND ACCEPTANCE OF THE PROJECT BY THE OWNER WILL ASSUME RESPONSIBILITY FOR ALL LONG–TERM MAINTENANCE.
2. A WRITTEN MAINTENANCE REPORT MUST BE KEPT AT THE SITE DURING CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE SITE CONTRACTOR TO ENSURE THAT THIS OPERATION & MAINTENANCE SCHEDULE BE MAINTAINED AND LOGGED.

TEMPORARY STABILIZATION NOTES

1. EROSION CONTROL BLANKET AND TEMPORARY/PERMANENT TURF REINFORCEMENT MAT SHALL BE INSTALLED WHERE INDICATED ON SHEETS 4–13.
2. WEED–FREE HAY OR STRAW MULCH MUST BE APPLIED AT 3.0 TONS PER ACRE OR PER PLANTING SPECIFICATION. STRAW MULCH SHALL BE APPLIED IN LONG STRANDS, NOT CHOPPED OR FINELY BROKEN. HAY OR MULCH IS NOT A SUBSTITUTION FOR ECB WHERE INDICATED ON PLANS.
3. TEMPORARY SEEDING SHALL CONSIST OF OATS (AVERE SATIVA) IN SPRING AND/OR SUMMER, AND WINTER WHEAT IN FALL AND/OR WINTER. SEED MIXED SHALL CONTAIN A MINIMUM OF 85% LIVE SEED. APPLICATION RATE IS TO BE 30 LBS. PER ACRE OR 10 LBS. PER 1000 S.F.. TEMPORARY SEEDING SHALL BE APPLIED TO THOSE AREAS THAT ARE A POTENTIAL EROSION RISK AND THOSE AREAS WHERE CONSTRUCTION ACTIVITIES HAVE ENDED.

CONSTRUCTION SEQUENCE

THE CONSTRUCTION PLANS HAVE BEEN DEVELOPED BASED ON AVAILABLE INFORMATION PROVIDED BY THE SURVEYOR. THE PROJECT AREA INCLUDES EXISTING UTILITIES OF UNKNOWN LOCATION AND DEPTH. ACTUAL CONDITIONS MAY DIFFER FROM THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL CONDITIONS PRIOR TO INITIATING WORK, AND FOR NOTIFYING OWNER IMMEDIATELY UPON BECOMING AWARE OF POTENTIAL CONFLICTS OR VARIATIONS IN CONDITIONS. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF ALL UTILITY AND STRUCTURE LOCATIONS AND ELEVATIONS AS REQUIRED FOR CONSTRUCTION.

THE SITE WORK INCLUDES THE CONSTRUCTION OF MULTIPLE COMPONENTS INCLUDING BUT NOT LIMITED TO THE INSTALLATION OF:

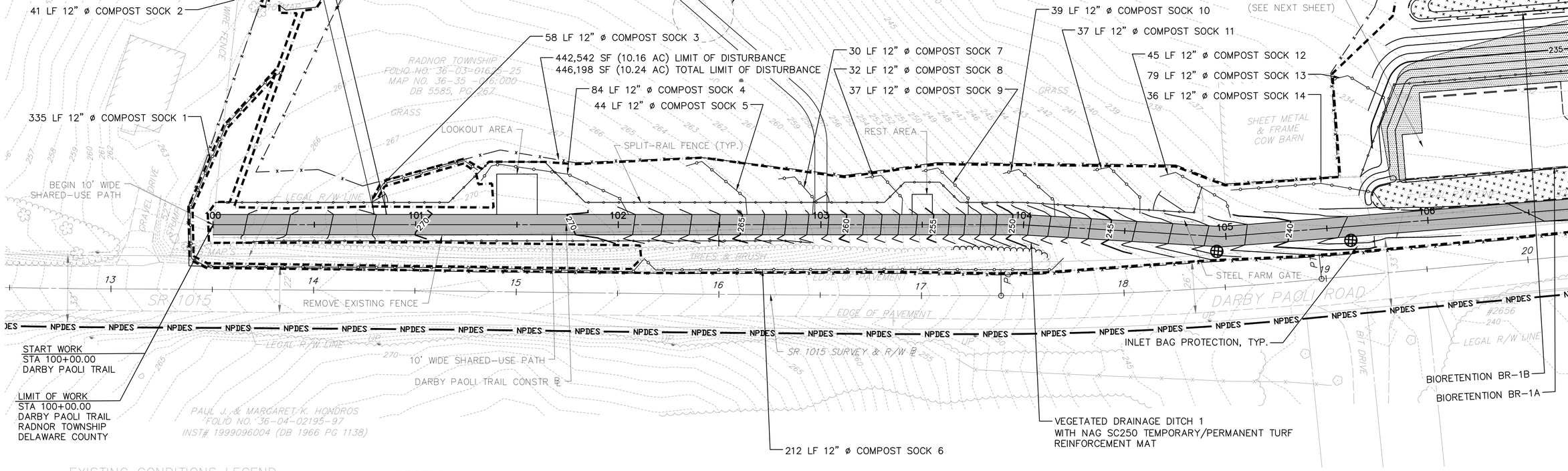
- EROSION AND SEDIMENTATION CONTROL MEASURES
- DEMOLITION OF ASSOCIATED SITE FEATURES AND REMOVAL OF PAVEMENT (WHERE NECESSARY)
- EXCAVATION AND CONSTRUCTION OF TRAIL PATH AND ASSOCIATED GRADING
- STORMWATER INLETS, PIPES, AND STRUCTURES THAT CONVEY RUNOFF
- SITE IMPROVEMENT FEATURES
- PAVING AND STRIPING AND RESTRIPING OF PAVING DURING ALL PHASES AND FINAL LAYOUT OF ALL PARKING AREAS
- INSTALLATION OF LANDSCAPE COMPONENTS

CONSTRUCTION SEQUENCE (CONT'D.)

DOCUMENTATION FOR THESE SITE COMPONENTS IS PROVIDED ON MULTIPLE PLAN SHEETS AND SPECIFICATIONS. THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION OF ALL SITE IMPROVEMENTS IN A MANNER TO AVOID CONFLICTS AND DAMAGE TO EXISTING SYSTEMS OR SITE COMPONENTS AS PART OF THIS PROJECT. UPON COMPLETION OR TEMPORARY CESSATION OF EARTH DISTURBANCE ACTIVITIES OR ANY STAGE THEREOF, THE PROJECT SHALL BE IMMEDIATELY STABILIZED WITH THE APPROPRIATE TEMPORARY OR PERMANENT STABILIZATION. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE.

1. STATE LAW REQUIRES A MINIMUM THREE DAY BUSINESS DAY NOTICE, BUT NOT MORE THAN TEN BUSINESS DAYS, PRIOR TO EARTH DISTURBANCE. ORDER A UTILITY MARK OUT UTILIZING THE PENNSYLVANIA ONE CALL SYSTEM. SITE UTILITIES MUST BE FIELD LOCATED AND MARKED BEFORE THE START OF ANY SITE WORK, INCLUDING ALL PRIVATE UTILITIES. CONFIRM LOCATIONS AND INVERTS.
2. THE CONTRACTOR SHALL SCHEDULE A PRE–CONSTRUCTION MEETING WITH THE PROJECT MANAGER AND ENGINEER OF RECORD. THE PROJECT DISTURBANCE AREA SHALL BE REVIEWED AT THIS MEETING. AN ON–SITE PRE–CONSTRUCTION MEETING IS REQUIRED TO OCCUR NO LESS THAN 7– DAYS PRIOR TO ANY EARTH DISTURBANCE UNLESS NOTIFIED OTHERWISE BY PADEP OR THE DELAWARE COUNTY CONSERVATION DISTRICT. PERMITTEES, CO–PERMITTEES, OPERATORS, ALL APPROPRIATE MUNICIPAL OFFICIALS, REPRESENTATIVES FROM THE DELAWARE COUNTY CONSERVATION DISTRICT AND PADEP, AND LICENSED PROFESSIONALS OR DESIGNEES RESPONSIBLE FOR THE EARTH DISTURBANCE ACTIVITY, INCLUDING IMPLEMENTATION OF E&S AND PCSM PLANS AND CRITICAL STAGES OF IMPLEMENTATION OF THE APPROVED PCSM PLAN, SHALL ATTEND A PRECONSTRUCTION MEETING. AT LEAST 7 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES.
3. AT LEAST THREE DAYS PRIOR TO THE START OF EARTH DISTURBANCE ACTIVITIES, ORDER A UTILITY MARK OUT UTILIZING THE PENNSYLVANIA ONE CALL SYSTEM. SITE UTILITIES MUST BE FIELD LOCATED AND MARKED BEFORE THE START OF ANY SITE WORK, INCLUDING ALL PRIVATE UTILITIES. CONFIRM LOCATIONS AND INVERTS.
4. UPON COMPLETION OR TEMPORARY CESSATION OF THE EARTH DISTURBANCE ACTIVITY THAT WILL EXCEED 4 DAYS, OR ANY STAGE THEREOF, THE PROJECT SITE SHALL BE IMMEDIATELY STABILIZED WITH THE APPROPRIATE TEMPORARY OR PERMANENT STABILIZATION.
5. INSTALL TEMPORARY ROCK CONSTRUCTION ENTRANCES, AS NOTED ON THE EROSION & SEDIMENT CONTROL PLAN, PRIOR TO BEGINNING DEMOLITION.
6. INSTALL CONSTRUCTION FENCING ALONG LIMIT OF DISTURBANCE. INSTALL TREE PROTECTION AND COMPOST SOCK AS SHOWN ON THE PLAN. NO DISTURBANCE CAN TAKE PLACE OUTSIDE OF THE LIMIT OF DISTURBANCE. NO WORK SHALL TAKE PLACE OUTSIDE OF THE PROJECT LIMIT.
7. CLEAR AND GRUB AREAS FOR THE LOCATION OF THE PROPOSED PATH.
8. MAP OUT TRAIL GEOMETRY. EXCAVATE 4" DEEP AND 5' WIDE. COMPACT EXISTING EARTH AND ADD PAVEMENT.
9. GRADE SIDE SLOPES TO MEET EXISTING GRADE. STABILIZE GRADING WITH EROSION CONTROL BLANKET.
10. PLANT PROPOSED TREES.
11. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED (VEGETATED AREAS SHALL BE CONSIDERED PERMANENTLY STABILIZED WHEN A UNIFORM 70% VEGETATIVE COVER OF EROSION RESISTANT PERENNIAL SPECIES HAS BEEN ACHIEVED), REMOVE TEMPORARY EROSION AND SEDIMENTATION CONTROLS. AREAS DISTURBED DURING REMOVAL OF THE CONTROLS MUST ALSO BE STABILIZED IMMEDIATELY.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MARC B. HENDERSON
ENGINEER
No. 080430



EXISTING CONDITIONS LEGEND

- PARKING METER
- BOL EXISTING BOLLARD
- EXISTING TREE OR SHRUB
- GL EXISTING GROUND LIGHT
- SL EXISTING STREET LIGHT POST
- FP EXISTING FLAG POLE
- MON EXISTING MONUMENT
- IP EXISTING IRON PIN FOUND
- MB EXISTING MAILBOX
- EXISTING SIGN
- EXISTING CURB
- EXISTING FENCE/RAILING
- EXISTING GUIDERAIL
- EXISTING TRAFFIC SIGNAL
- EXISTING LUMINARIES
- EXISTING GUY WIRE
- EX. UTILITY POLE
- RD EX. ROOF DRAIN
- JB EXISTING JUNCTION BOX
- WV EXISTING WATER VALVE
- GV EXISTING GAS VALVE
- MH EXISTING MANHOLE
- FH EXISTING FIRE HYDRANT
- T EXISTING TELEPHONE CONDUIT
- G EXISTING GAS MAIN/PIPELINE
- S EXISTING SANITARY SEWER MAIN
- W EXISTING WATER MAIN
- E EX. UNDERGROUND ELECTRIC LINE
- OHW EX. OVERHEAD WIRES
- EXISTING STORM WATER PIPE
- EXISTING STORM INLET
- EXISTING EDGE OF PAVEMENT
- EXISTING RIGHT-OF-WAY
- EXISTING PROPERTY LINE
- EXISTING EASEMENT LINE
- NRCS SOIL BOUNDARY
- FEMA FLOODWAY BOUNDARY
- FEMA BASE FLOOD BOUNDARY
- EXISTING WETLANDS

LEGEND

- LIMIT OF DISTURBANCE
- CONSTRUCTION FENCE
- TREE PROTECTION
- COMPOST SOCK
- ROCK CONSTRUCTION ENTRANCE
- EROSION CONTROL BLANKET
- INLET BAG PROTECTION
- STORMWATER MANAGEMENT FACILITY
- TIMBER MAT STABILIZATION
- SHARED USE PATH
- DELINEATED WETLAND

SCALE

HORIZONTAL 0 25 50 FEET

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MARC B. HENDRICKS No. 080420

meliora
Civil, Water Resources, and Structural Engineering

MELIORA DESIGN
259 MORGAN STREET
PHOENIXVILLE, PA 19460
610.933.0123
WWW.MELIORADESIGN.COM

DESIGN BY: JDR
DRAWN BY: JDR
CHECKED BY: MBH

JOB NO: 17041
DWG: 4
DATE: 01/31/2020

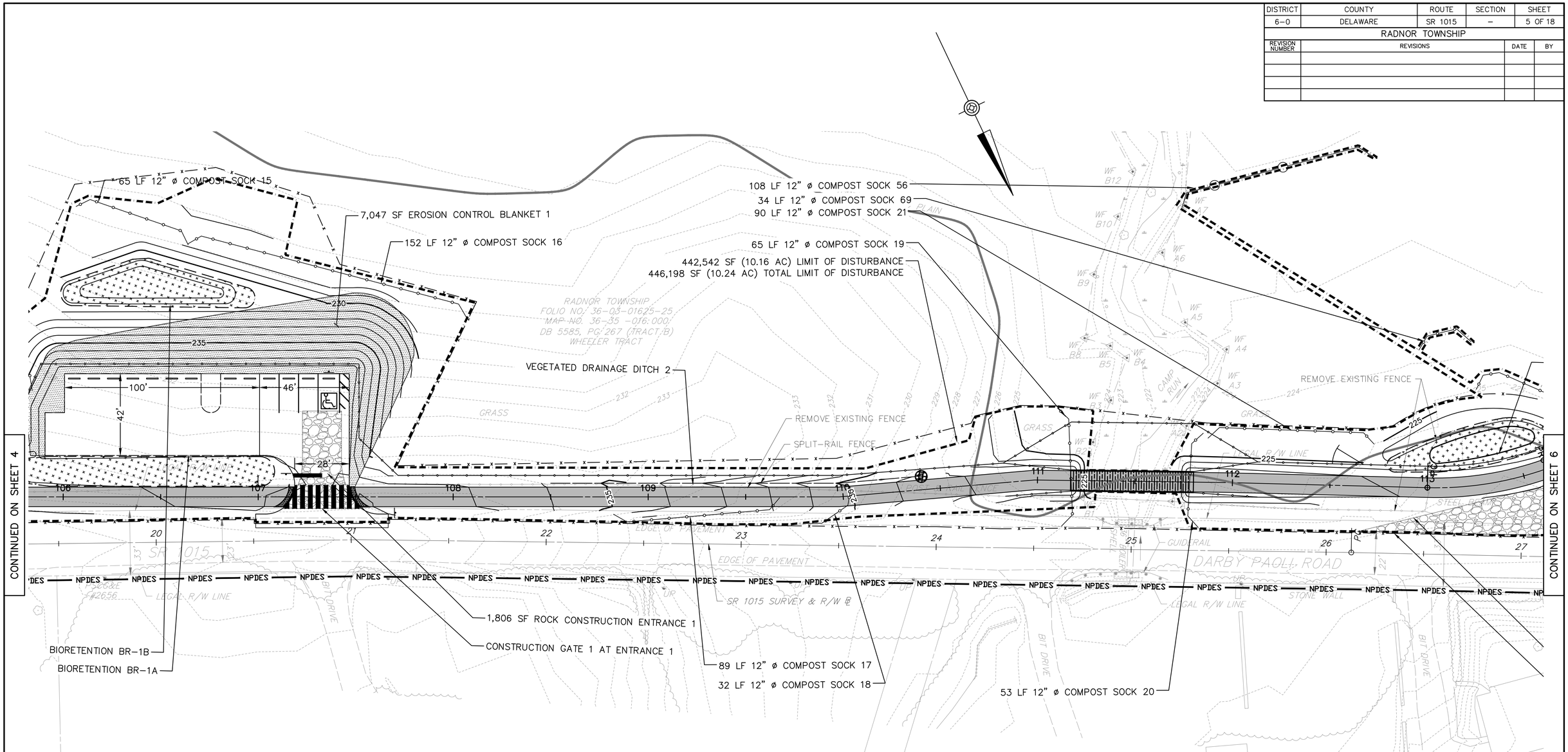
RADNOR TOWNSHIP
301 IVEN AVENUE
WAYNE, PA 19087-5297
(610) 688-5600

DARBY-PAOLI TRAIL
SR 1015
RADNOR TOWNSHIP
DELAWARE COUNTY

E&S CONTROL
STA 100+00 TO 106+00

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6–0	DELAWARE	SR 1015	–	5 OF 18
RADNOR TOWNSHIP				

REVISION NUMBER	REVISIONS	DATE	BY



EXISTING CONDITIONS LEGEND

- PARKING METER
- BOL EXISTING BOLLARD
- EXISTING TREE OR SHRUB
- GL EXISTING GROUND LIGHT
- SL EXISTING STREET LIGHT POST
- FP EXISTING FLAG POLE
- MON EXISTING MONUMENT
- IP EXISTING IRON PIN FOUND
- MB EXISTING MAILBOX
- EXISTING SIGN
- EXISTING CURB
- EXISTING FENCE/RAILING
- EXISTING GUIDERAIL
- EXISTING TRAFFIC SIGNAL
- EXISTING LUMINARIES
- EXISTING GUY WIRE
- EX. UTILITY POLE
- RD EX. ROOF DRAIN
- WV EXISTING WATER VALVE
- GV EXISTING GAS VALVE
- MH EXISTING MANHOLE
- FH EXISTING FIRE HYDRANT
- T EXISTING TELEPHONE CONDUIT
- G EXISTING GAS MAIN/PIPELINE
- S EXISTING SANITARY SEWER MAIN
- W EXISTING WATER MAIN
- E EX. UNDERGROUND ELECTRIC LINE
- OHW EX. OVERHEAD WIRES
- EXISTING STORM WATER PIPE
- EXISTING STORM INLET
- EXISTING EDGE OF PAVEMENT
- EXISTING RIGHT-OF-WAY
- EXISTING PROPERTY LINE
- EXISTING EASEMENT LINE
- NRCS SOIL BOUNDARY
- FEMA FLOODWAY BOUNDARY
- FEMA BASE FLOOD BOUNDARY
- EXISTING WETLANDS

LEGEND

- LIMIT OF DISTURBANCE
- CONSTRUCTION FENCE
- TREE PROTECTION
- COMPOST SOCK
- ROCK CONSTRUCTION ENTRANCE
- EROSION CONTROL BLANKET
- INLET BAG PROTECTION
- STORMWATER MANAGEMENT FACILITY
- TIMBER MAT STABILIZATION
- SHARED USE PATH
- DELINEATED WETLAND

SCALE

HORIZONTAL 0 25 50 FEET

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MARC B. HENDERSON
ENGINEER
No. 080420

meliora
Civil, Water Resources, and Structural Engineering

MELIORA DESIGN
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PHOENIXVILLE, PA 19460
610.933.0123
WWW.MELIORADESIGN.COM

DESIGN BY: JDR
DRAWN BY: JDR
CHECKED BY: MBH

JOB NO: 17041
DWG: 5
DATE: 01/31/2020

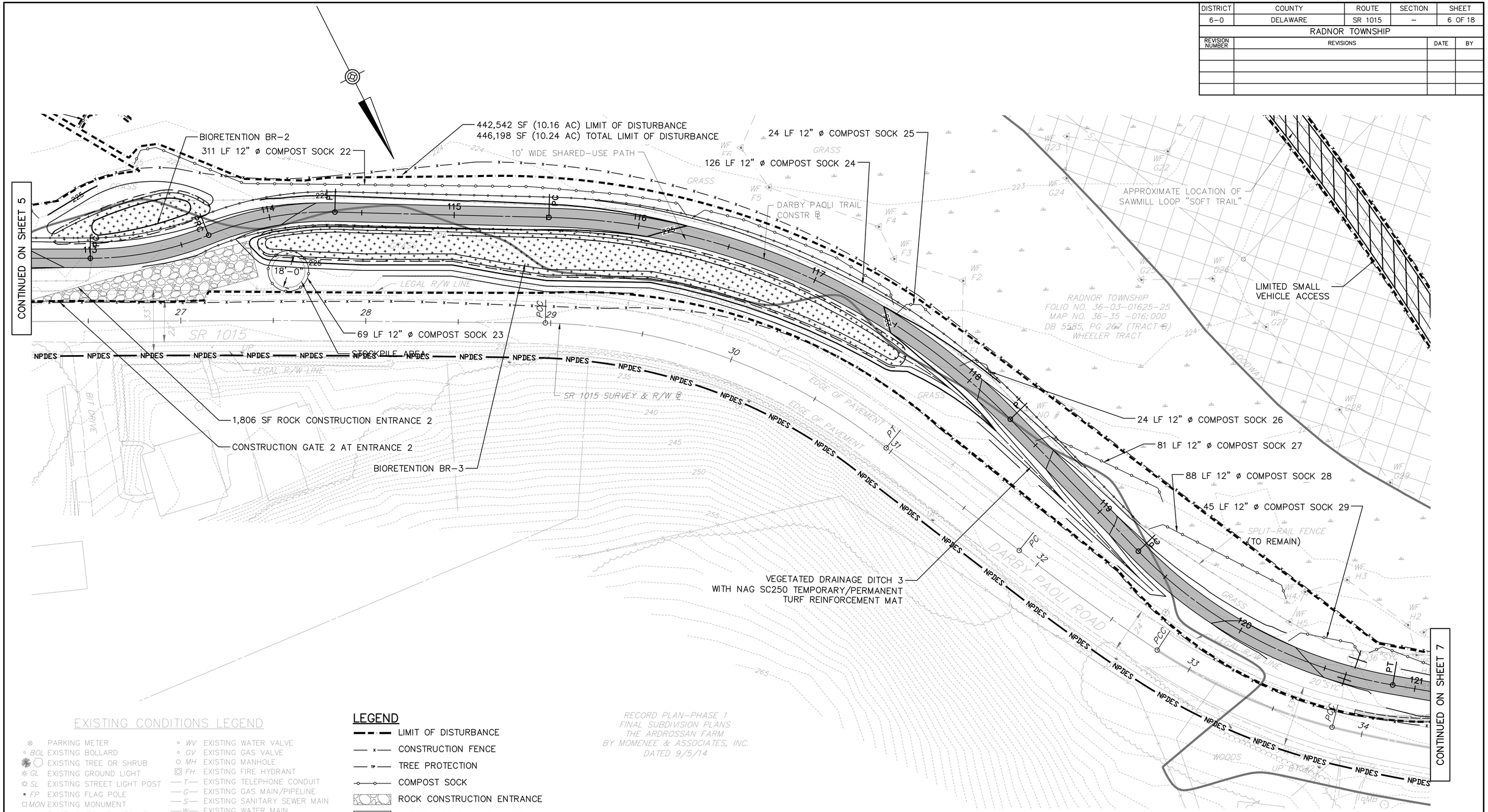
RADNOR TOWNSHIP
301 IVEN AVENUE
WAYNE, PA 19087-5297
(610) 688-5600

DARBY-PAOLI TRAIL
SR 1015
RADNOR TOWNSHIP
DELAWARE COUNTY

E&S CONTROL
STA 106+00 TO 113+00

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6–0	DELAWARE	SR 1015	–	6 OF 18
RADNOR TOWNSHIP				

REVISION NUMBER	REVISIONS	DATE	BY



EXISTING CONDITIONS LEGEND

- PARKING METER
- BOL EXISTING BOLLARD
- EXISTING TREE OR SHRUB
- GL EXISTING GROUND LIGHT
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- EXISTING PROPERTY LINE
- EXISTING EASEMENT LINE
- NRCS SOIL BOUNDARY
- FEMA FLOODWAY BOUNDARY
- FEMA BASE FLOOD BOUNDARY
- EXISTING WETLANDS

LEGEND

- LIMIT OF DISTURBANCE
- CONSTRUCTION FENCE
- TREE PROTECTION
- COMPOST SOCK
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- EROSION CONTROL BLANKET
- INLET BAG PROTECTION
- STORMWATER MANAGEMENT FACILITY
- TIMBER MAT STABILIZATION
- SHARED USE PATH
- DELINEATED WETLAND

RECORD PLAN–PHASE 1
FINAL SUBDIVISION PLANS
THE ARDROSSAN FARM
BY MOMENEE & ASSOCIATES, INC.
DATED 9/5/14

SCALE

HORIZONTAL 0 25 50 FEET

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MARC B. HENDERSON ENGINEER No. 080420

meliora
Civil, Water Resources, and Structural Engineering

MELIORA DESIGN
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PHOENIXVILLE, PA 19460
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DESIGN BY: JDR
DRAWN BY: JDR
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JOB NO: 17041
DWG: 6
DATE: 01/31/2020

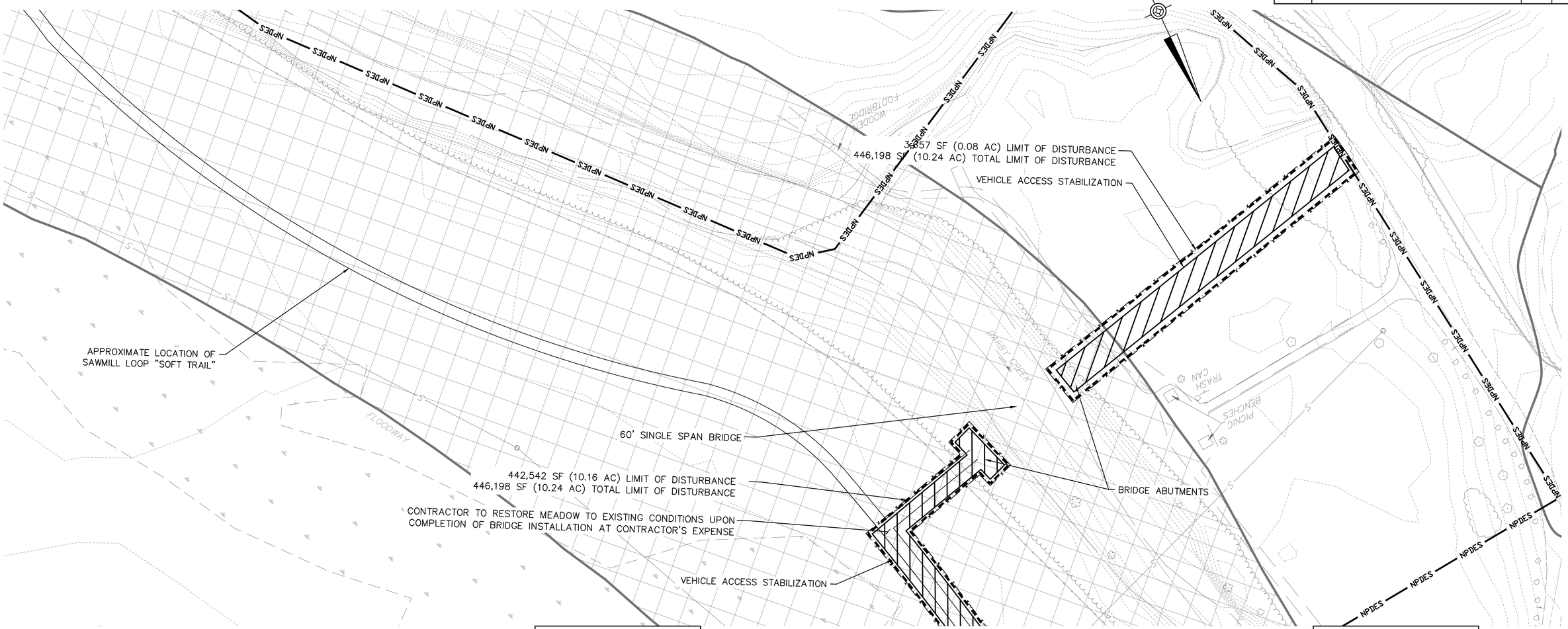
RADNOR TOWNSHIP
301 IVEN AVENUE
WAYNE, PA 19087–5297
(610) 688–5600

DARBY–PAOLI TRAIL
SR 1015
RADNOR TOWNSHIP
DELAWARE COUNTY

E&S CONTROL
STA 113+00 TO 121+00

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6–0	DELAWARE	SR 1015	–	7 OF 18
RADNOR TOWNSHIP				

REVISION NUMBER	REVISIONS	DATE	BY



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- EXISTING EASEMENT LINE
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- FEMA BASE FLOOD BOUNDARY
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LEGEND

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- INLET BAG PROTECTION
- STORMWATER MANAGEMENT FACILITY
- TIMBER MAT STABILIZATION
- SHARED USE PATH
- DELINEATED WETLAND

SCALE

HORIZONTAL 0 25 50 FEET

NOTES:

1. TIMBER MAT VEHICLE STABILIZATION IS TO PROVIDE LIMITED VEHICLE ACCESS WITH LIMITED DISTURBANCE. CONTRACTOR TO USE VEHICLES AND EQUIPMENT OF LIMITED SIZE TO PREVENT RUTTING AND EARTH DISTURBANCE

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MARC B. HENDERSON No. 080420

meliora Civil, Water Resources, and Structural Engineering

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DRAWN BY: JDR
CHECKED BY: MBH

JOB NO: 17041
DWG: 7
DATE: 01/31/2020

RADNOR TOWNSHIP
301 IVEN AVENUE
WAYNE, PA 19087–5297
(610) 688–5600

DARBY–PAOLI TRAIL
SR 1015
RADNOR TOWNSHIP DELAWARE COUNTY

E&S CONTROL – BRIDGE

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6–0	DELAWARE	SR 1015	–	8 OF 18
RADNOR TOWNSHIP				

REVISION NUMBER	REVISIONS	DATE	BY

EXISTING CONDITIONS LEGEND

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LEGEND

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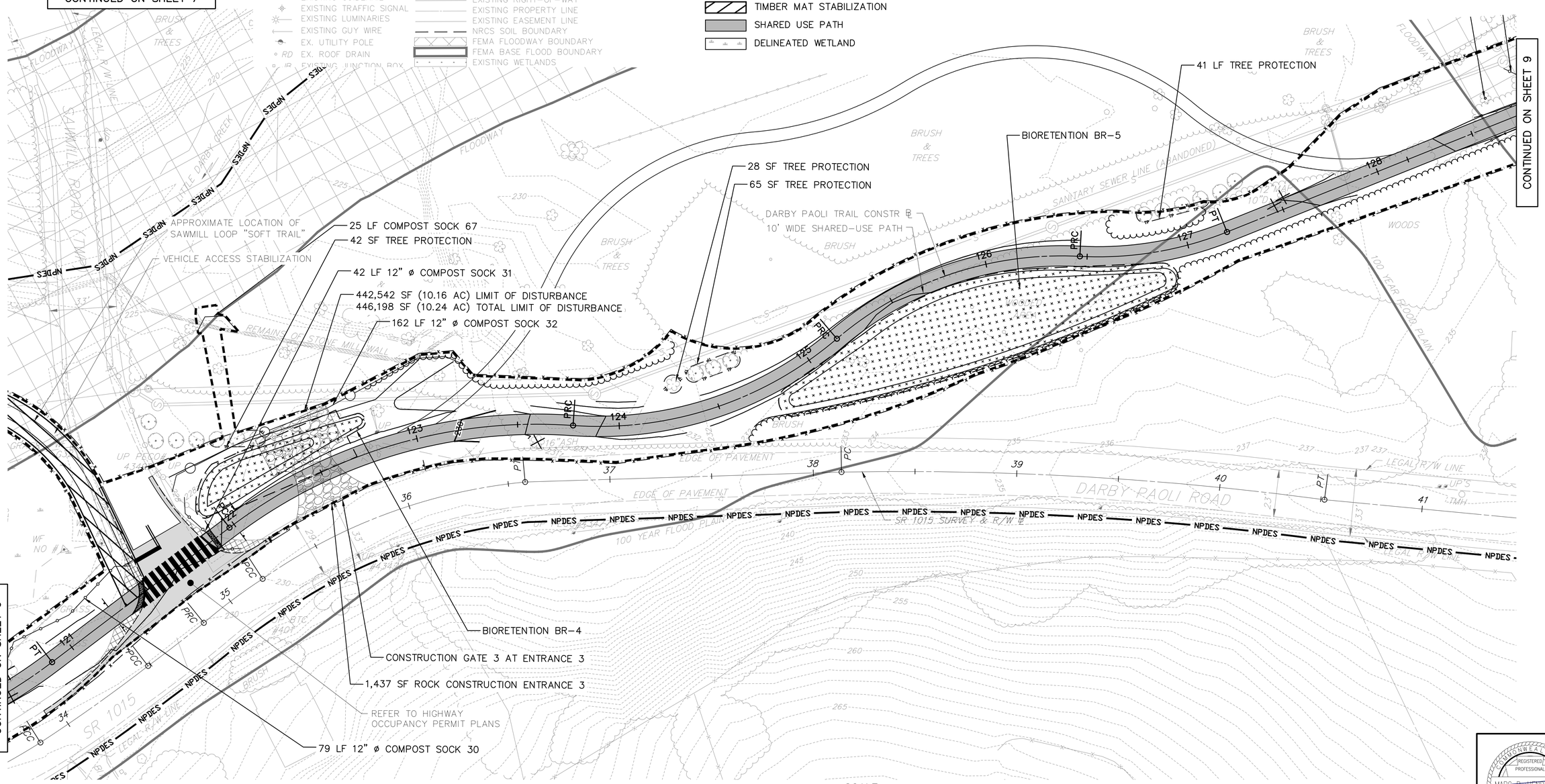


SCALE

HORIZONTAL 0 25 50 FEET

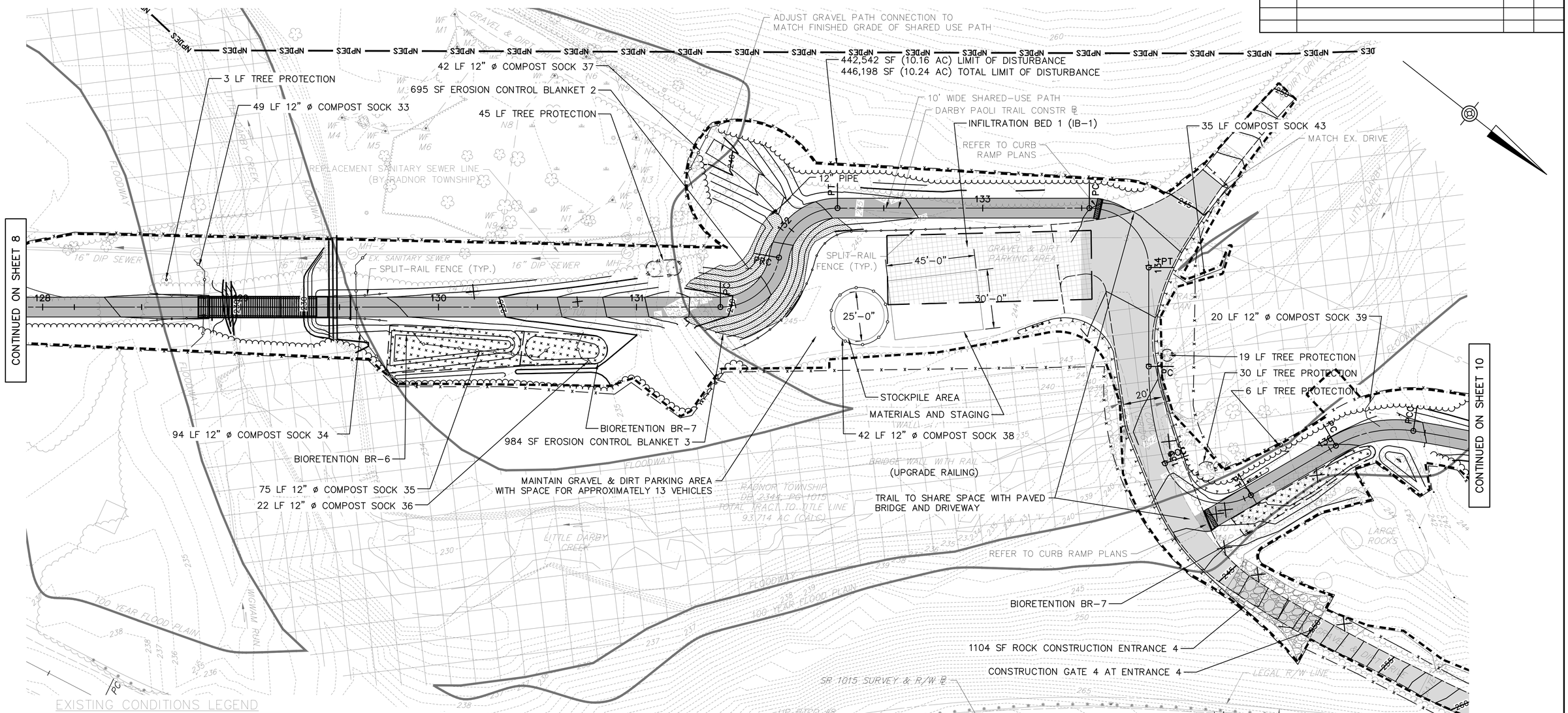
MARC B. HENDERSON REGISTERED PROFESSIONAL ENGINEER No. 080420 COMMONWEALTH OF PENNSYLVANIA

meliora Civil, Water Resources, and Structural Engineering	MELIORA DESIGN 259 MORGAN STREET PHOENIXVILLE, PA 19460 610.933.0123 WWW.MELIORADESIGN.COM	DESIGN BY: JDR DRAWN BY: JDR CHECKED BY: MBH	JOB NO: 17041 DWG: 8 DATE: 01/31/2020	RADNOR TOWNSHIP 301 IVEN AVENUE WAYNE, PA 19087-5297 (610) 688-5600	DARBY-PAOLI TRAIL SR 1015 RADNOR TOWNSHIP DELAWARE COUNTY

E&S CONTROL
STA 121+00 TO 128+00

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6–0	DELAWARE	SR 1015	–	9 OF 18
RADNOR TOWNSHIP				

REVISION NUMBER	REVISIONS	DATE	BY



EXISTING CONDITIONS LEGEND

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SCALE

HORIZONTAL 0 25 50 FEET

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MARC B. HENDERSON No. 080420

meliora
Civil, Water Resources, and Structural Engineering

MELIORA DESIGN
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610.933.0123
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DESIGN BY: JDR	JOB NO: 17041		
DRAWN BY: JDR	DWG: 9		
CHECKED BY: MBH	DATE: 01/31/2020		

RADNOR TOWNSHIP
301 IVEN AVENUE
WAYNE, PA 19087-5297
(610) 688-5600

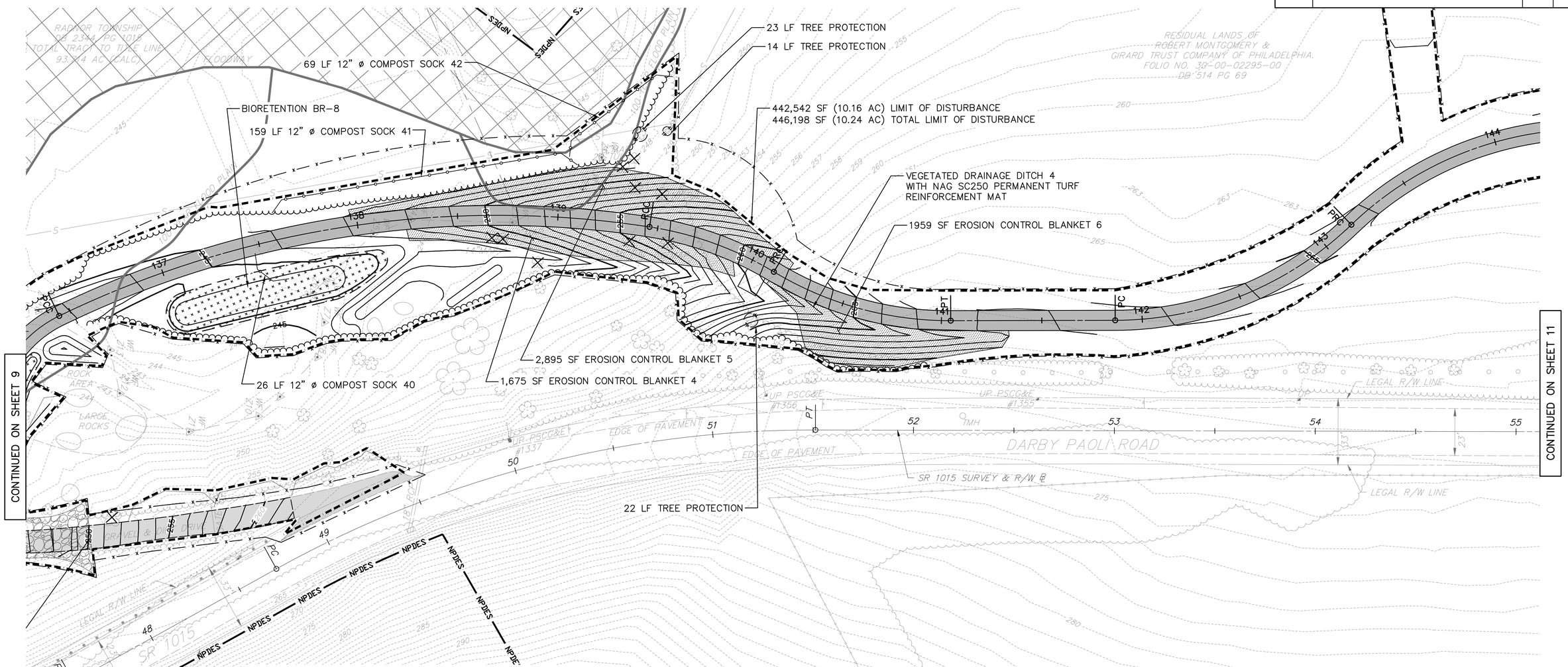
DARBY–PAOLI TRAIL
SR 1015

RADNOR TOWNSHIP DELAWARE COUNTY

E&S CONTROL
STA 128+00 TO 136+00

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6–0	DELAWARE	SR 1015	–	10 OF 18
RADNOR TOWNSHIP				

REVISION NUMBER	REVISIONS	DATE	BY



EXISTING CONDITIONS LEGEND

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LEGEND

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SCALE

HORIZONTAL 0 25 50 FEET

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MARC B. HENDERSON
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RADNOR TOWNSHIP
301 IVEN AVENUE
WAYNE, PA 19087-5297
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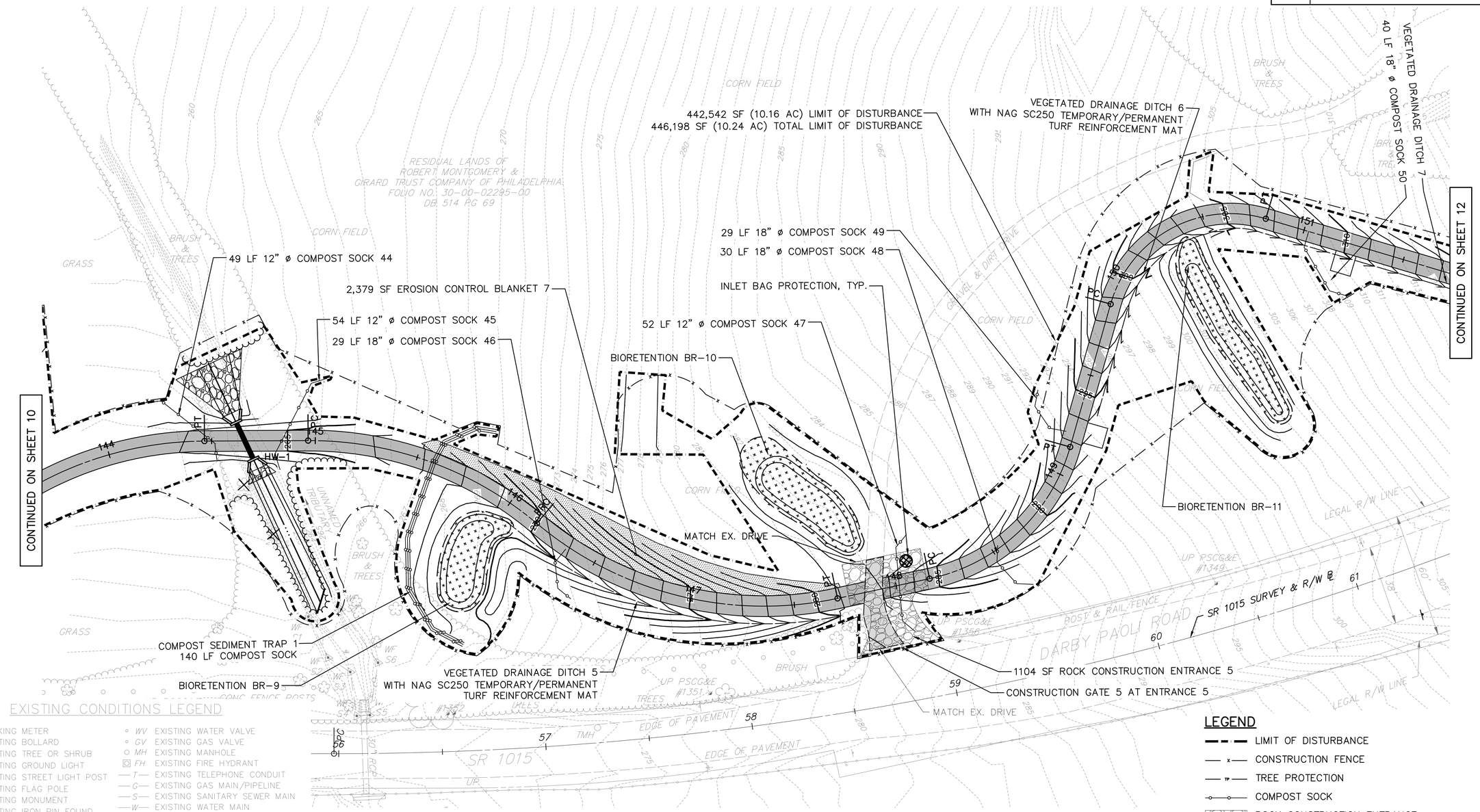
DARBY-PAOLI TRAIL
SR 1015
RADNOR TOWNSHIP
DELAWARE COUNTY

E&S CONTROL
STA 136+00 TO 144+00

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6–0	DELAWARE	SR 1015	–	11 OF 18
RADNOR TOWNSHIP				

REVISION NUMBER	REVISIONS	DATE	BY



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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
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DARBY–PAOLI TRAIL
SR 1015
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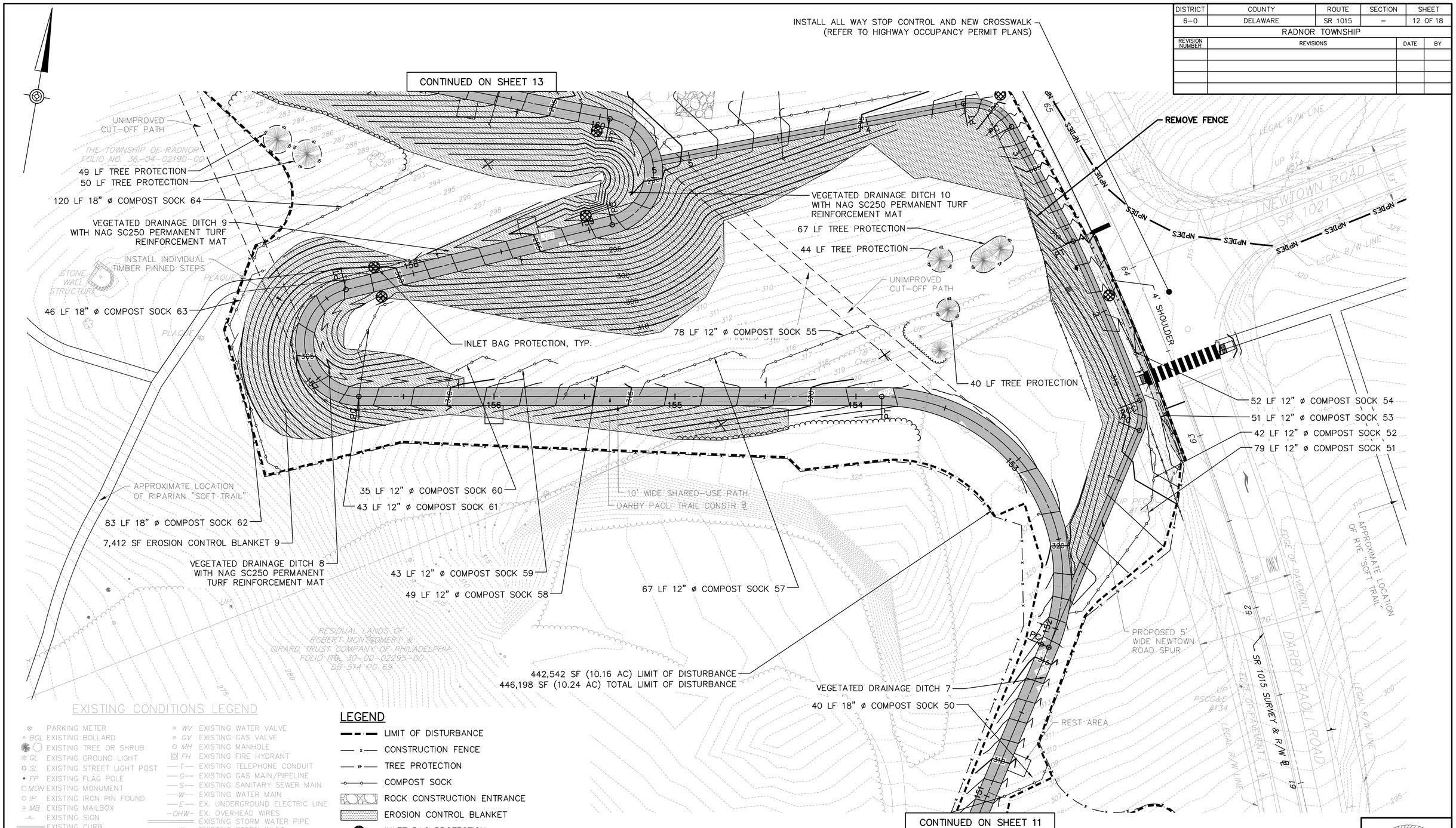
DELAWARE COUNTY

E&S CONTROL
STA 144+00 TO 151+00

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6-0	DELAWARE	SR 1015	–	12 OF 18
RADNOR TOWNSHIP				

REVISION NUMBER	REVISIONS	DATE	BY



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- COMPOST SOCK
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- EROSION CONTROL BLANKET
- INLET BAG PROTECTION
- STORMWATER MANAGEMENT FACILITY
- TIMBER MAT STABILIZATION
- SHARED USE PATH
- DELINEATED WETLAND

SCALE

HORIZONTAL 0 25 50 FEET

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MARC B. HENDERSON ENGINEER No. 080420

meliora Civil, Water Resources, and Structural Engineering	MELIORA DESIGN 259 MORGAN STREET PHOENIXVILLE, PA 19460 610.933.0123 WWW.MELIORADESIGN.COM	DESIGN BY: JDR DRAWN BY: JDR CHECKED BY: MBH	JOB NO: 17041 DWG: 12 DATE: 01/31/2020	RADNOR TOWNSHIP 301 IVEN AVENUE WAYNE, PA 19087-5297 (610) 688-5600	DARBY-PAOLI TRAIL SR 1015 RADNOR TOWNSHIP DELAWARE COUNTY

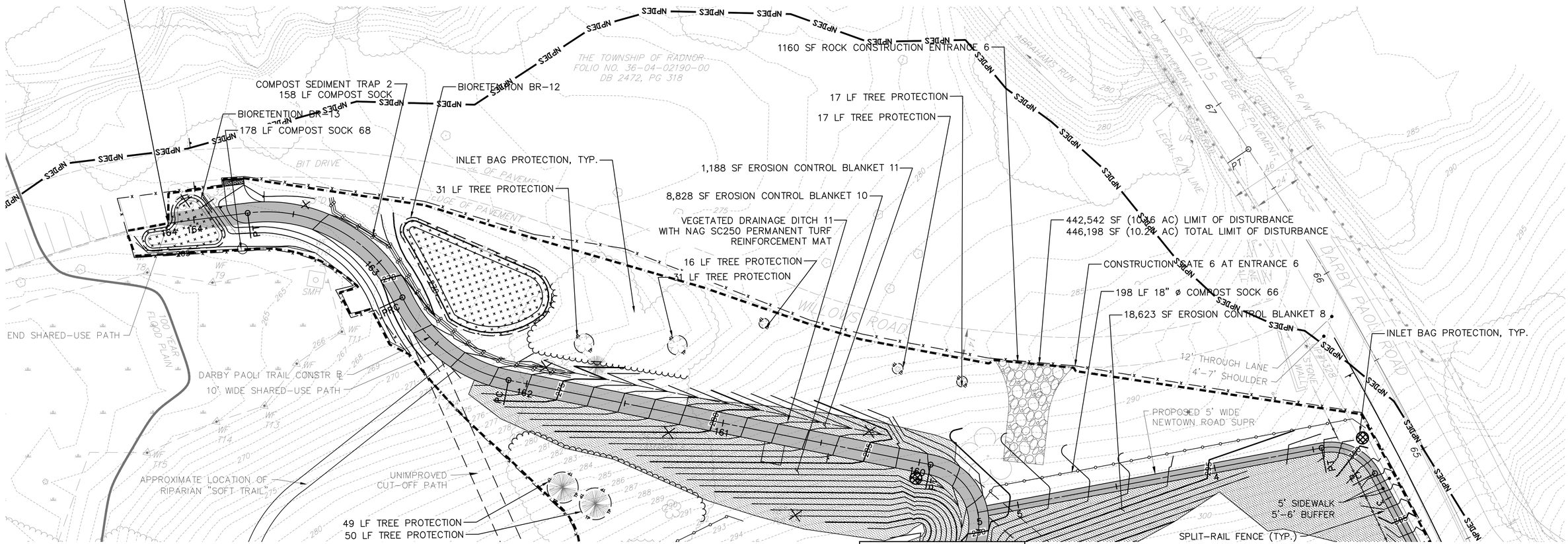
E&S CONTROL
STA 151+00 TO 160+00

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6-0	DELAWARE	SR 1015	–	13 OF 18
RADNOR TOWNSHIP				

REVISION NUMBER	REVISIONS	DATE	BY

LIMIT OF WORK
STA 164+12.91
DARBY PAOLI TRAIL
RADNOR TOWNSHIP
DELAWARE COUNTY

STOP WORK
STA 164+12.91
DARBY PAOLI TRAIL



CONTINUED ON SHEET 12

EXISTING CONDITIONS LEGEND

- PARKING METER
- BOL EXISTING BOLLARD
- EXISTING TREE OR SHRUB
- GL EXISTING GROUND LIGHT
- SL EXISTING STREET LIGHT POST
- FP EXISTING FLAG POLE
- MON EXISTING MONUMENT
- IP EXISTING IRON PIN FOUND
- MB EXISTING MAILBOX
- EXISTING SIGN
- EXISTING CURB
- EXISTING FENCE/RAILING
- EXISTING GUIDERAIL
- EXISTING TRAFFIC SIGNAL
- EXISTING LUMINARIES
- EXISTING GUY WIRE
- EX. UTILITY POLE
- RD EX. ROOF DRAIN
- JB EXISTING JUNCTION BOX
- WV EXISTING WATER VALVE
- GV EXISTING GAS VALVE
- MH EXISTING MANHOLE
- FH EXISTING FIRE HYDRANT
- T EXISTING TELEPHONE CONDUIT
- G EXISTING GAS MAIN/PIPELINE
- S EXISTING SANITARY SEWER MAIN
- W EXISTING WATER MAIN
- E EX. UNDERGROUND ELECTRIC LINE
- OHW EX. OVERHEAD WIRES
- EXISTING STORM WATER PIPE
- EXISTING STORM INLET
- EXISTING EDGE OF PAVEMENT
- EXISTING RIGHT-OF-WAY
- EXISTING PROPERTY LINE
- EXISTING EASEMENT LINE
- NRCS SOIL BOUNDARY
- FEMA FLOODWAY BOUNDARY
- FEMA BASE FLOOD BOUNDARY
- EXISTING WETLANDS

LEGEND

- LIMIT OF DISTURBANCE
- CONSTRUCTION FENCE
- TREE PROTECTION
- COMPOST SOCK
- ROCK CONSTRUCTION ENTRANCE
- EROSION CONTROL BLANKET
- INLET BAG PROTECTION
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SCALE

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E&S CONTROL
STA 160+00 TO 164+12.91

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6–0	DELAWARE	SR 1015	–	14 OF 18
RADNOR TOWNSHIP				

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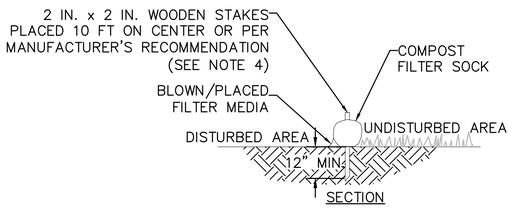
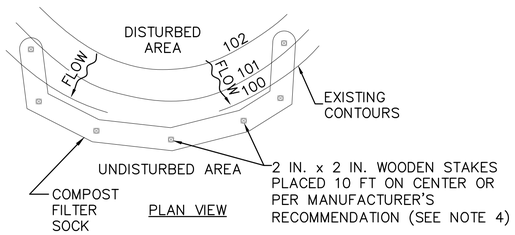


SECTION

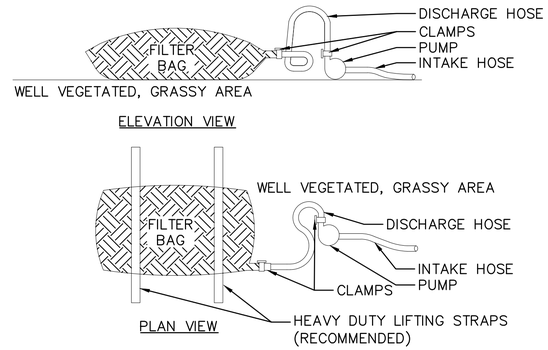


PLAN VIEW

NOTES:

1. SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.
4. FOR PAVED SURFACE APPLICATIONS, OBJECTS OF CONSIDERABLE MASS (I.E. CONCRETE BLOCKS, SAND BAGS, ETC.) SHALL BE USED IMMEDIATELY DOWNSLOPE OF COMPOST FILTER SOCKS IN LIEU OF STAKES. MAXIMUM SPACING OF STABILIZING OBJECTS SHALL BE EQUAL TO THE MANUFACTURER'S RECOMMENDATION FOR STAKE SPACING.
5. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
6. COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
7. BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR.
8. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

1/14 COMPOST SOCK
TYPICAL N.T.S.



ELEVATION VIEW

PLAN VIEW

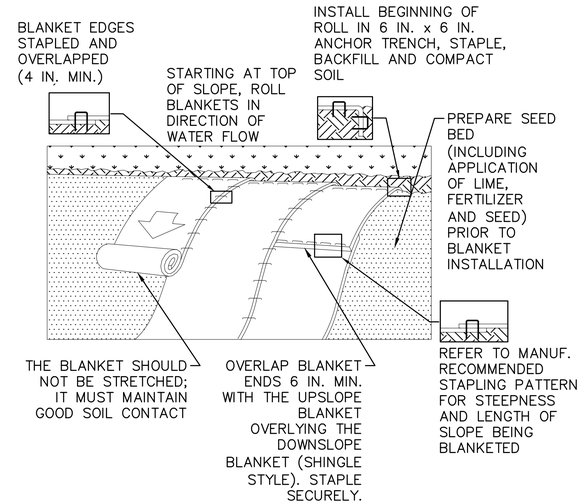
NOTES:

1. LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON–WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
M	ASTM D–4884	60 LB/IN
GRAB TENSILE	ASTM D–4632	205 LB
PUNCTURE	ASTM D–4833	110 LB
MULLEN BURST	ASTM D–3786	350 PSI
UV RESISTANCE	ASTM D–4355	70%
AOS % RETAINED	ASTM D–4751	80 SIEVE

2. A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.
3. BAGS SHALL BE LOCATED IN WELL–VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON–ERODIBLE AND NON–POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.
4. NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.
5. THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.
6. THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.
7. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

2/14 PUMPED WATER FILTER BAG
TYPICAL N.T.S.



NOTES:

SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.

PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.

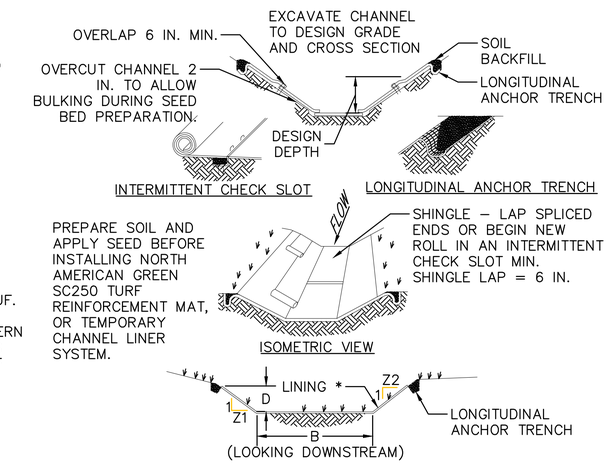
SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.

BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.

THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

3/14 EROSION CONTROL BLANKET INSTALLATION
NTS



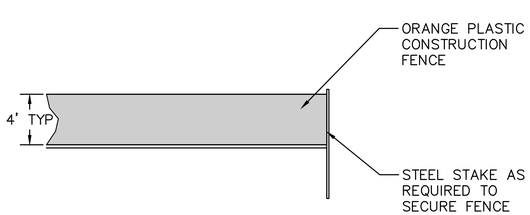
CHANNEL CROSS–SECTION

* SEE MANUFACTURER'S LINING INSTALLATION DETAIL FOR STAPLE PATTERNS, VEGETATIVE STABILIZATION FOR SOIL AMENDMENTS, SEED MIXTURES AND MULCHING INFORMATION

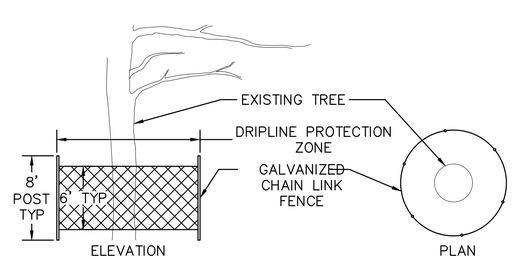
NOTES:

1. ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES.
2. CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. CHANNEL SHALL BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION.
3. SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE. DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY.
4. NO MORE THAN ONE THIRD OF THE SHOOT (GRASS LEAF) SHALL BE REMOVED IN ANY MOWING. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED. EXCESS VEGETATION SHALL BE REMOVED FROM PERMANENT CHANNELS TO ENSURE SUFFICIENT CHANNEL CAPACITY.

4/14 VEGETATED CHANNEL
NTS



5/14 CONSTRUCTION FENCE
NTS



6/14 TREE PROTECTION FENCE
NTS

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CHECKED BY: MBH
JOB NO: 17041
DWG: 14
DATE: 01/31/2020

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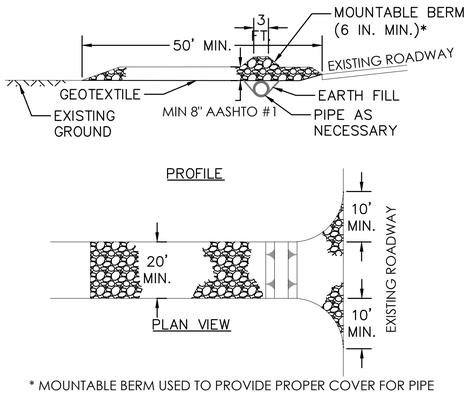
DELAWARE COUNTY

E&S CONTROL DETAILS – SHEET 1

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6–0	DELAWARE	SR 1015	–	15 OF 18
RADNOR TOWNSHIP				

REVISION NUMBER	REVISIONS	DATE	BY

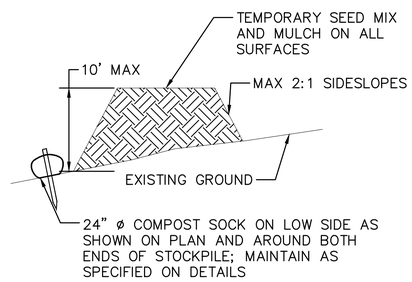


* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

1. REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
2. RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
3. MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.
4. MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

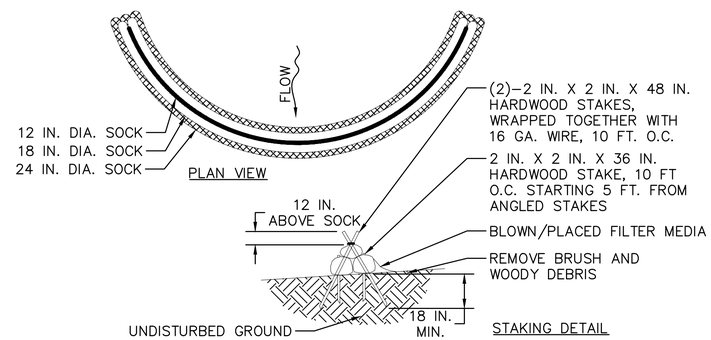
15/– ROCK CONSTRCUTION ENTRANCE NTS



MAINTENANCE NOTES:

1. TEMPORARILY STOCKPILE TOPSOIL OR EXCAVATED SOIL MATERIAL AS NEEDED AT LOCATIONS SHOWN FOR EACH PHASE OF CONSTRUCTION. EXCESS EXCAVATED MATERIAL SHALL BE PERMANENTLY REMOVED FROM THE SITE.
2. HEIGHT AND SIDESLOPES SHALL NOT EXCEED MAXIMUM VALUES SHOWN ON DETAIL.
3. INSTALL COMPOST SOCK PRIOR TO STOCKPILING OF MATERIAL. REPLACE ANY COMPOST SOCK REMOVED FOR VEHICULAR ACCESS AFTER EACH WORK DAY.
4. APPLY SEED AND MULCH WHEN PILE IS NOT SUBJECT TO VEHICULAR ACCESS FOR SEVEN DAYS OR MORE.

8/15 TEMPORARY SOIL STOCKPILE NTS



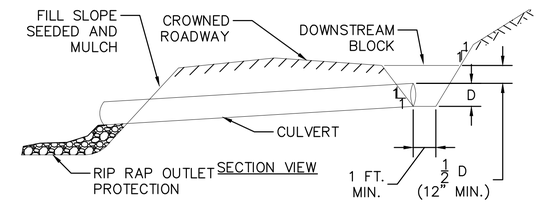
DESIGN NOTES:

1. COMPOST SOCK SEDIMENT TRAP SHALL BE SIZED TO PROVIDE 2000 CUBIC FEET OF STORAGE CAPACITY FOR EACH ACRE TRIBUTARY TO THE TRAP.
2. MINIMUM BASE WIDTH IS EQUAL TO THE HEIGHT.
3. SEDIMENT ACCUMULATION SHALL NOT EXCEED 1/3 THE TOTAL HEIGHT OF THE TRAP.
4. SOCKS SHALL BE OF LARGER DIAMETER AT THE BASE OF THE TRAP AND DECREASE IN DIAMETER FOR SUCCESSIVE LAYERS AS SHOWN ON THE PLAN VIEW.
5. ENDS OF THE TRAP SHALL BE A MINIMUM OF 1 FOOT HIGHER IN ELEVATION THAN THE MID–SECTION, WHICH SHALL BE LOCATED AT THE POINT OF DISCHARGE.

NOTES:

1. SOCK MATERIAL SHALL MEET THE STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.
2. COMPOST SOCK SEDIMENT TRAPS SHALL NOT EXCEED THREE SOCKS IN HEIGHT AND SHALL BE STACKED IN PYRAMIDAL FORM AS SHOWN ABOVE. MINIMUM TRAP HEIGHT IS ONE 24" DIAMETER SOCK. ADDITIONAL STORAGE MAY BE PROVIDED BY MEANS OF AN EXCAVATED SUMP 12" DEEP EXTENDING 1 TO 3 FEET UPSLOPE OF THE SOCKS ALONG THE LOWER SIDE OF THE TRAP.
3. COMPOST SOCK SEDIMENT TRAPS SHALL PROVIDE 2,000 CUBIC FEET STORAGE CAPACITY WITH 12" FREEBOARD FOR EACH TRIBUTARY DRAINAGE ACRE. (SEE MANUFACTURER FOR ANTICIPATED SETTLEMENT.)
4. THE MAXIMUM TRIBUTARY DRAINAGE AREA IS 5.0 ACRES. SINCE COMPOST SOCKS ARE "FLOW–THROUGH," NO SPILLWAY IS REQUIRED.
5. COMPOST SOCK SEDIMENT TRAPS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/3 THE HEIGHT OF THE SOCKS.
6. PHOTODEGRADABLE AND BIODEGRADABLE SOCKS SHALL NOT BE USED FOR MORE THAN 1 YEAR.

9/15 COMPOST SOCK SEDIMENT TRAP NTS



NOTES:

CUT AND FILL SLOPES SHALL BE STABILIZED IMMEDIATELY UPON COMPLETION OF ROADWAY GRADING. THESE AREAS SHALL BE BLANKETED WHEREVER THEY ARE LOCATED WITHIN 50 FEET OF A SURFACE WATER OR WITHIN 100 FEET OF AN HQ OR EV SURFACE WATER OR WHERE A SUITABLE VEGETATIVE FILTER STRIP DOES NOT EXIST.

A TOP DRESSING COMPOSED OF HARD, DURABLE STONE SHALL BE PROVIDED FOR SOILS HAVING LOW STRENGTH.

ROADSIDE DITCHES SHALL BE PROVIDED WITH ADEQUATE PROTECTIVE LINING WHEREVER RUNOFF CANNOT SHEET FLOW AWAY FROM THE ROADWAY.

ADEQUATELY SIZED CULVERTS OR OTHER SUITABLE CROSS DRAINS SHALL BE PROVIDED AT ALL SEEPS, SPRINGS, AND DRAINAGE COURSES. DITCH RELIEF CULVERTS OR TURNOUTS SHALL BE PROVIDED AT THE INTERVALS INDICATED ON TABLE 3.3 OR TABLE 3.4 OF THE PA DEP EROSION CONTROL MANUAL FOR ROADSIDE DITCHES. RIPRAP OUTLET PROTECTION TO BE SIZED ACCORDING TO ANTICIPATED DISCHARGE VELOCITY.

ROADWAY SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED ROADWAYS, DITCHES, OR CROSS DRAINS SHALL BE REPAIRED IMMEDIATELY.

10/15 CROWNED ROADWAY NTS

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E&S CONTROL DETAILS – SHEET 2

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6–0	DELAWARE	SR 1015	–	16 OF 18
RADNOR TOWNSHIP				

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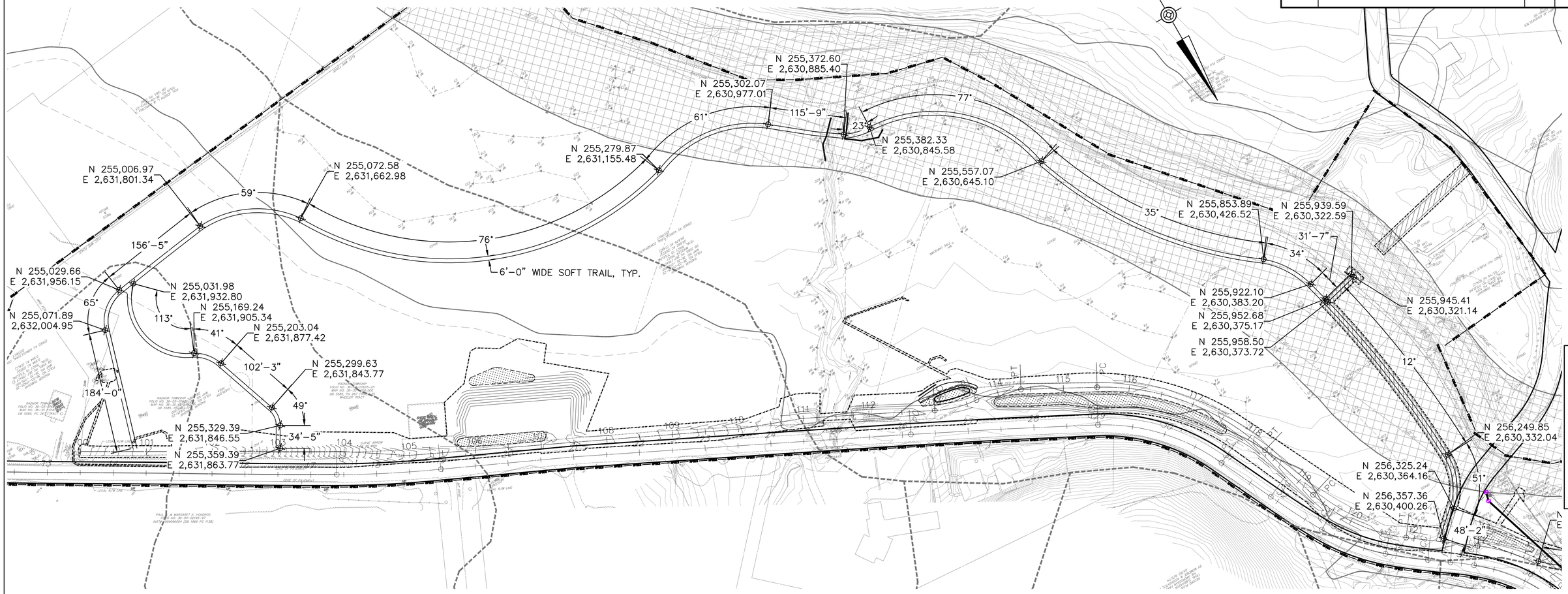

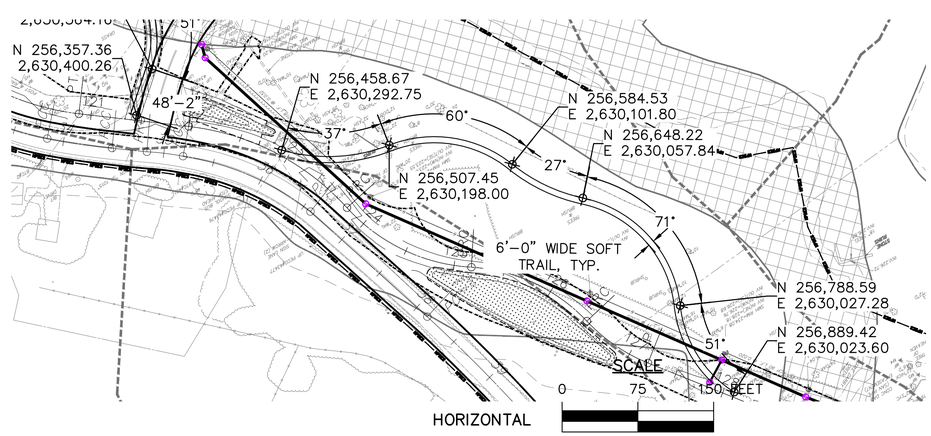

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DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6–0	DELAWARE	SR 1015	–	17 OF 18
RADNOR TOWNSHIP				

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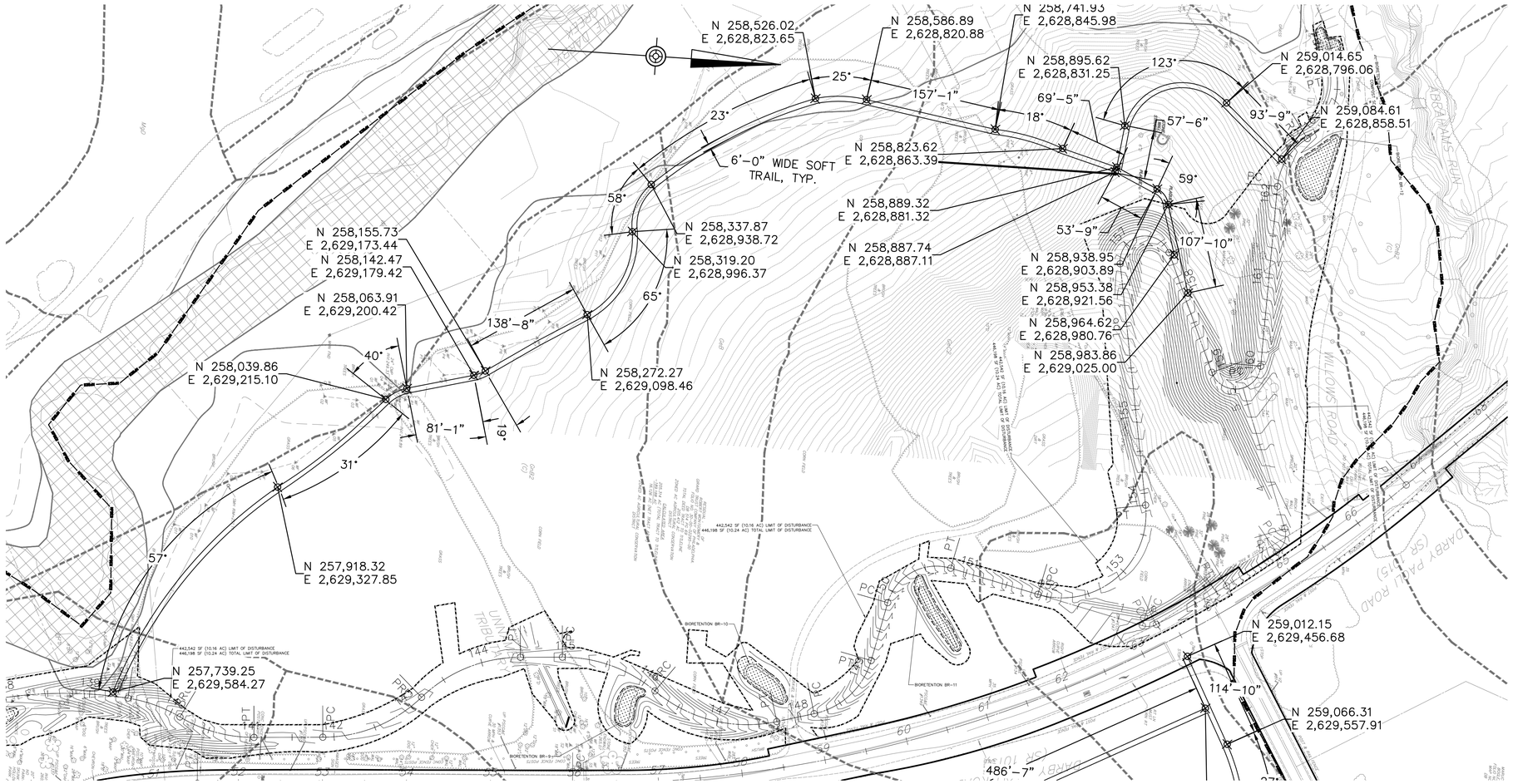

CONTINUED ON SHEET 6

SCALE

HORIZONTAL 0 75 150 FEET

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MARC B. HENDERSON
No. 080420

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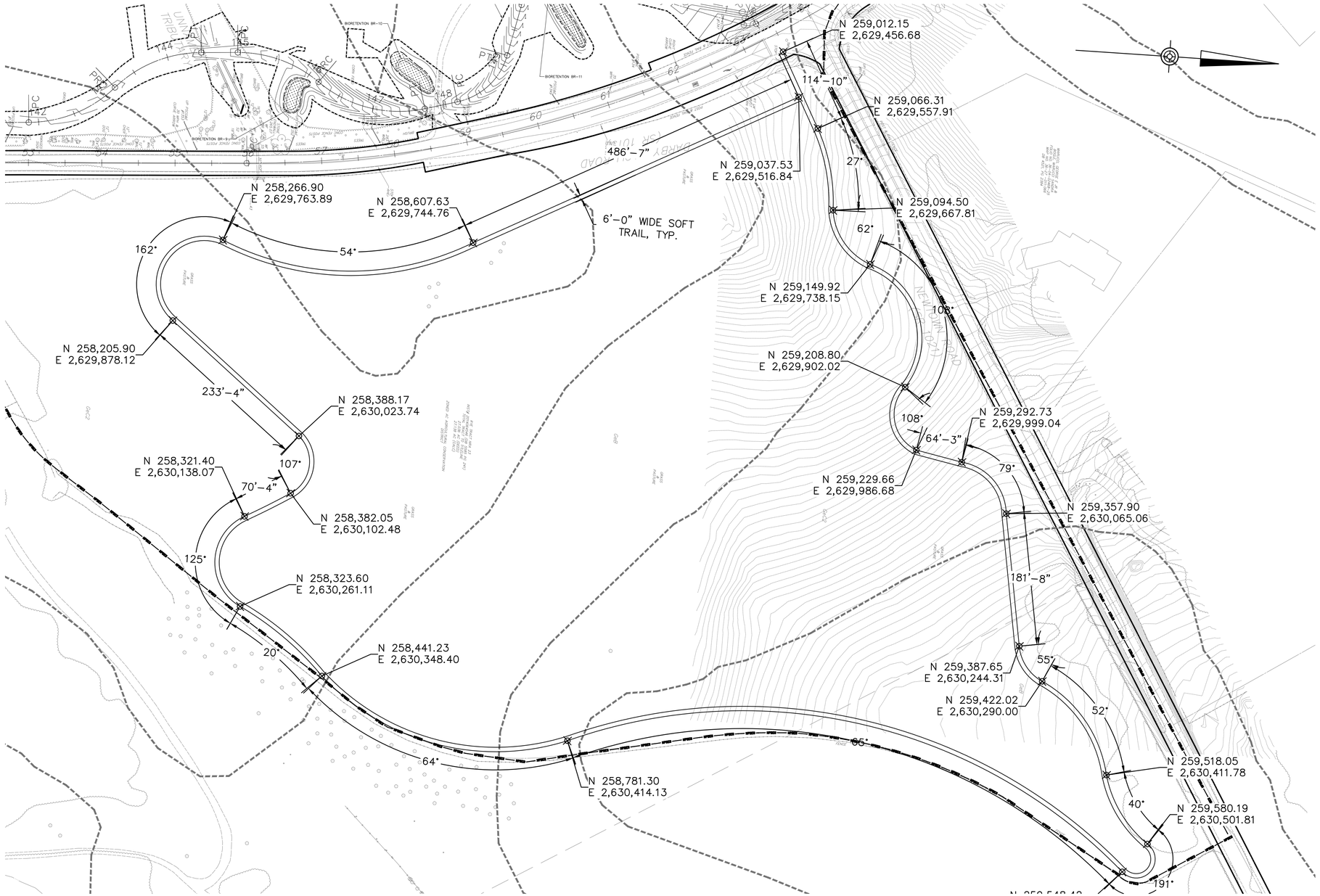
E&S CONTROL – SOFT TRAILS
SHEET 2

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6–0	DELAWARE	SR 1015	–	18 OF 18
RADNOR TOWNSHIP				

REVISION NUMBER	REVISIONS	DATE	BY



CONTINUED ON SHEET 6

SCALE

HORIZONTAL 0 75 150 FEET

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MARC B. HENDERSON
ENGINEER
No. 080420

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