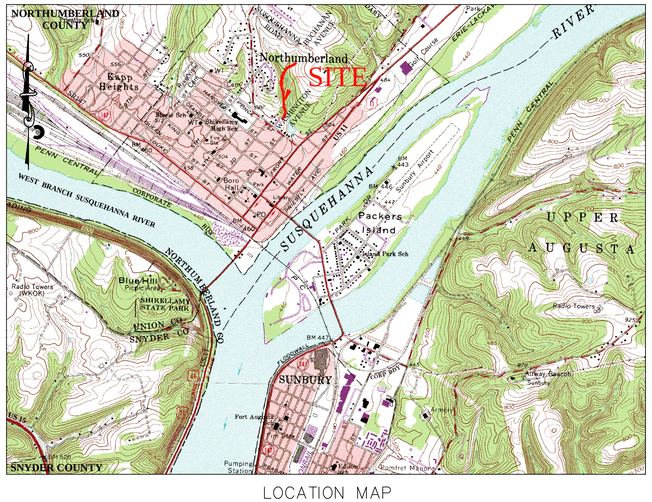
CONSTRUCTION PLANS

FOR

LIBERTY HOLLOW TRAIL

LOCATED IN
NORTHUMBERLAND BOROUGH,
NORTHUMBERLAND COUNTY, PENNSYLVANIA



LOCATION MAP

SCALE: 1"=2000'

SHEET INDEX:

SHEET 01 – CS	COVER SHEET
SHEET 02 – S1	EXISTING CONDITIONS
SHEET 03 – S2	SITE PLAN
SHEET 04 – S3	OVERALL PROFILE
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SHEET 08 – D1	GENERAL DETAILS
SHEET 09 – ES1	E&S PLAN
SHEET 10 – ES2	E&S NOTES
SHEET 11 – ES3	E&S DETAILS

SITE KEY MAP

SCALE: 1"=1000'

SITE INFORMATION

1. SITE INFORMATION
   - A. OWNERS OF RECORD: BOROUGH OF NORTHUMBERLAND
     ANN AUGUST (570) 473–3414
     175 ORANGE STREET
     NORTHUMBERLAND, PA 17857
   - B. TAX PARCEL NO.: WASHINGTON STREET EXTENSION
   - C. SOURCE OF TITLE: DB 562, PG. 358
   - D. PROPERTY SIZE: 2.54 ACRES
   - E. SITE USE EXISTING: A VACANT TRACT OF LAND BEING THE UNOPENED PORTION OF WASHINGTON AVENUE KNOWN AS THE WASHINGTON STREET EXTENSION.
   - F. SITE USE PROPOSED: A RECREATIONAL TRAIL CONNECTING PRINCE STREET AND SUSQUEHANNA ROAD
   - G. ZONING DISTRICT: RESIDENTIAL DISTRICT (R–1) – PERMITTED USE
2. BOUNDARY AND TOPOGRAPHY FROM FILED SURVEY PERFORMED BY STAHL SHEAFFER ENGINEERING ON OCTOBER 29, 2015.
3. SOILS INFORMATION
   - BeB – BEDINGTON SILT LOAM
   - BkD – BERKS CHANNERY SILT LOAM
   - HtC – HARTLETON CHANNERY SILT LOAM
   - WkE – WEIKERT AND KLINESVILLE SHALY SILT LOAM

ACT 172 UTILITY INFORMATION

1. PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE – BEFORE YOU DIG CALL THE PA ONE CALL SYSTEM TELEPHONE NUMBER 1–800–242–1776.
2. ALL UTILITY INFORMATION AND LOCATIONS SHOWN ON THIS PLAN SHOULD BE CONSIDERED APPROXIMATE. ALL UTILITY LOCATIONS SHOULD BE VERIFIED IN THE FIELD. CONTRACTOR SHALL NOTIFY PA ONE CALL (1–800–242–1776) AT LEAST 3 DAYS PRIOR TO ANY EXCAVATION.

* WATER – PENNSYLVANIA AMERICAN WATER CO.
  105 SODOM ROAD
  MILTON, PA 17847–9762
  (800) 565–7292

* GAS – UGI PENN NATURAL GAS
  1349 SUSQUEHANNA TRAIL
  NORTHUMBERLAND, PA 17857
  (800) 276–2722

* NORTHUMBERLAND NATIONAL BANK
  245 FRONT STREET
  NORTHUMBERLAND, PA 17857
  (888) 877–6623
  (570) 473–3531 (NORTHUMBERLAND)

* COMMUNICATIONS – VERIZON PENNSYLVANIA LLC
  1717 ARCH STREET
  3RD FLOOR
  PHILADELPHIA, PA 17857
  (877) 288–9473

* ELECTRIC – PPL ELECTRIC UTILITIES CORPORATION
  464 SUSQUEHANNA TRAIL
  NORTHUMBERLAND, PA 17857
  (570) 473–4241

* SANITARY SEWER – NORTHUMBERLAND SEWER DEPARTMENT
  P.O. BOX 325
  NORTHUMBERLAND, PA 17857
  (570) 473–1992

* TV/CABLE – SERVICE ELECTRIC CABLE VISION INC.
  3662 POINT TOWNSHIP DRIVE
  NORTHUMBERLAND, PA 17857
  (800) 522–2389
  (570) 286–5951 (NORTHUMBERLAND)

* STORM SEWER – BOROUGH OF NORTHUMBERLAND
  175 ORANGE STREET
  NORTHUMBERLAND, PA 17857
  (570) 473–3414

GENERAL NOTES:

1. THE PURPOSE OF THIS PLAN IS TO CONSTRUCT A RECREATIONAL GRAVEL SURFACED TRAIL CONNECTING PRINCE STREET AT THE SOUTHERN END TO SUSQUEHANNA ROAD AT THE NORTHERN END VIA WASHINGTON AVENUE AND THE UNOPENED PORTION OF WASHINGTON AVENUE KNOW AS THE WASHINGTON STREET EXTENSION.
2. BOUNDARY AND TOPOGRAPHICAL SURVEY FOR THIS PROJECT SITE WAS PERFORMED BY STAHL SHEAFFER ENGINEERING ON OCTOBER 29, 2015.
3. ADDITIONAL PROPERTY BOUNDARY INFORMATION TAKEN FROM NORTHUMBERLAND COUNTY GIS MAPPING AND IS APPROXIMATE.
4. ADDITIONAL TOPOGRAPHY SHOWN PER PA DCNR – PA SPATIAL DATA ACCESS (PASDA) WEBSITE – PAMAP TOPOGRAPHIC CONTOURS OF PENNSYLVANIA.
5. VERTICAL DATUM FOR THIS PROJECT IS NAVD88.
6. HORIZONTAL DATUM FOR THIS PROJECT IS NAD83.
7. THE SITE IS NOT LOCATED WITHIN ANY FLOOD HAZARD AREAS AS ESTABLISHED IN FEMA FLOOD MAP NUMBER 42097C0195D, PANEL 195D OF 525, MAP EFFECTIVE DATE: JULY 16, 2008.
8. WETLANDS DEPICTED WITHIN THE PROJECT AREA WERE DELINEATED BY REPRESENTATIVES OF STAHL SHEAFFER ENGINEERING DURING A FIELD INVESTIGATION ON OCTOBER 10, 2015.
9. SOILS MAPPING INFORMATION SHOWN REPRESENTS THE NORTHUMBERLAND COUNTY SOIL SURVEY AS PROVIDED BY THE NATURAL RESOURCES CONSERVATION SERVICE, WEB SOIL SURVEY. WEB SEARCH WAS PERFORMED ON NOVEMBER 15, 2015.
10. UNDERGROUND UTILITY LOCATIONS SHOWN ON THIS PLAN ARE APPROXIMATE AND ARE BASED ON ABOVE GROUND APPURTENANCES AND SUPPLEMENTAL INFORMATION PROVIDED BY UTILITY COMPANIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO THE START OF ANY EARTHMOVING ACTIVITIES.

STAHL SHEAFFER ENGINEERING
301 SCIENCE PARK ROAD, SUITE 333
STATE COLLEGE, PA 16803
PH: 814-689-1562
FAX: 814-689-1885
WWW.SSE-LLC.COM

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL LAND SURVEYOR SU060672 CHARLES E. SHEAFFER

SEAL:

SURVEYOR	CES
CADD	GWD
DESIGNER	CES
PROJ. MANAGER	CES
FILE	15-144

DATE	DESCRIPTION

REVISIONS

PROJECT NAME

LIBERTY HOLLOW TRAIL

NORTHUMBERLAND BOROUGH

SHEET NAME

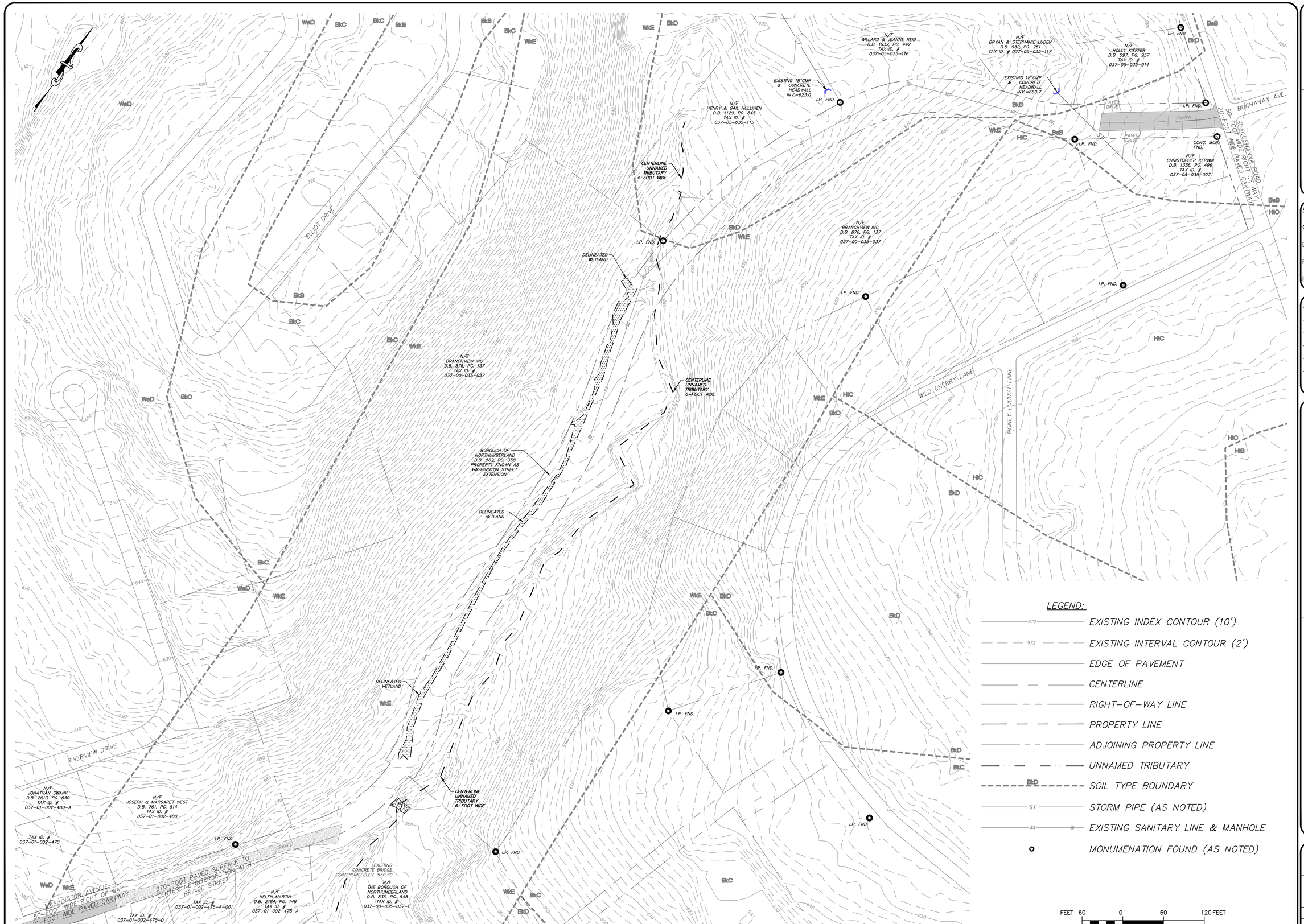
COVER

PROJECT NO.
SSE 15-144

DATE
APRIL 08, 2016

SCALE	SHEET NO.
AS NOTED	CS

PLOTTED: 15 Apr 2016, 7:10 PM



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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHAD E. SHAFFER
LAND SURVEYOR
SU060672

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CADD	GWD
DESIGNER	CES
PROJ. MANAGER	CES
FILE	15-144

DATE	DESCRIPTION

REVISIONS

PROJECT NAME

LIBERTY HOLLOW TRAIL

NORTHUMBERLAND BOROUGH

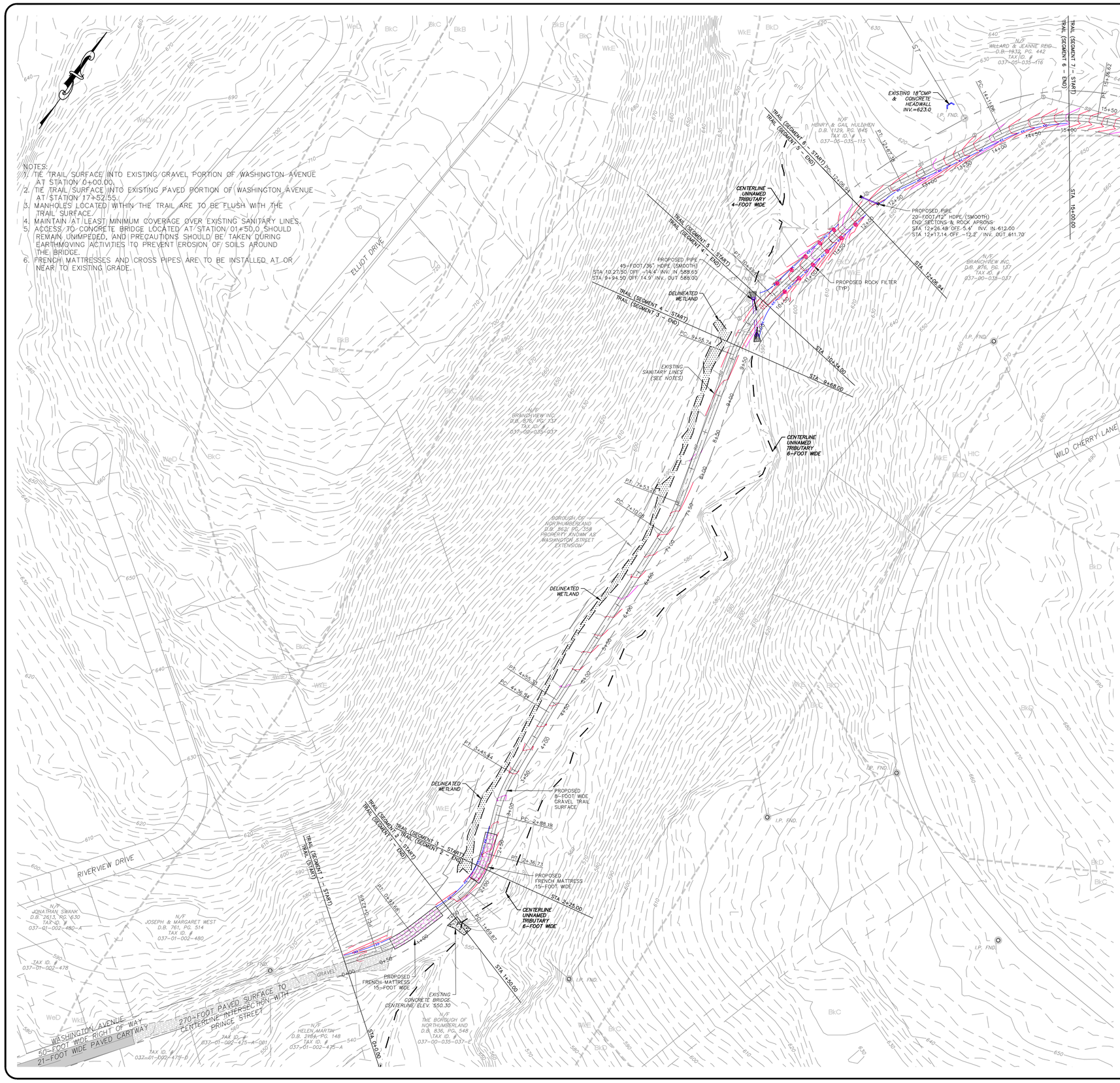
SHEET NAME

EXISTING CONDITIONS

PROJECT NO.	
SSE 15-144	
DATE	
APRIL 08, 2016	
SCALE	SHEET NO.
1:60	S1

PLOTTED: 15 Apr 2016, 5:12 PM

NOTES:
1. TIE TRAIL SURFACE INTO EXISTING GRAVEL PORTION OF WASHINGTON AVENUE AT STATION 0+00.00.
2. TIE TRAIL SURFACE INTO EXISTING PAVED PORTION OF WASHINGTON AVENUE AT STATION 17+52.55.
3. MANHOLES LOCATED WITHIN THE TRAIL ARE TO BE FLUSH WITH THE TRAIL SURFACE.
4. MAINTAIN AT LEAST MINIMUM COVERAGE OVER EXISTING SANITARY LINES.
5. ACCESS TO CONCRETE BRIDGE LOCATED AT STATION 01+50.0 SHOULD REMAIN UNIMPEDED, AND PRECAUTIONS SHOULD BE TAKEN DURING EARTHMOVING ACTIVITIES TO PREVENT EROSION OF SOILS AROUND THE BRIDGE.
6. FRENCH MATTRESSES AND CROSS PIPES ARE TO BE INSTALLED AT OR NEAR TO EXISTING GRADE.



LEGEND:

- PROPOSED INDEX CONTOUR (10')
- PROPOSED INTERVAL CONTOUR (2')
- EXISTING INDEX CONTOUR (10')
- EXISTING INTERVAL CONTOUR (2')
- PROPOSED ROCK APRON
- PROPOSED FRENCH MATTRESS
- PROPOSED GRASS/VEGETATED SWALE
- CUT LINE
- FILL LINE
- LIMIT OF DISTURBANCE
- EDGE OF PAVEMENT
- CENTERLINE
- RIGHT-OF-WAY LINE
- PROPERTY LINE
- ADJOINING PROPERTY LINE
- UNNAMED TRIBUTARY
- SOIL TYPE BOUNDARY
- STORM PIPE (AS NOTED)
- EXISTING SANITARY LINE & MANHOLE
- MONUMENATION FOUND (AS NOTED)

FEET 60 0 60 120 FEET
SCALE BAR

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FILE	15-144

DATE	DESCRIPTION

REVISIONS

PROJECT NAME

LIBERTY HOLLOW TRAIL

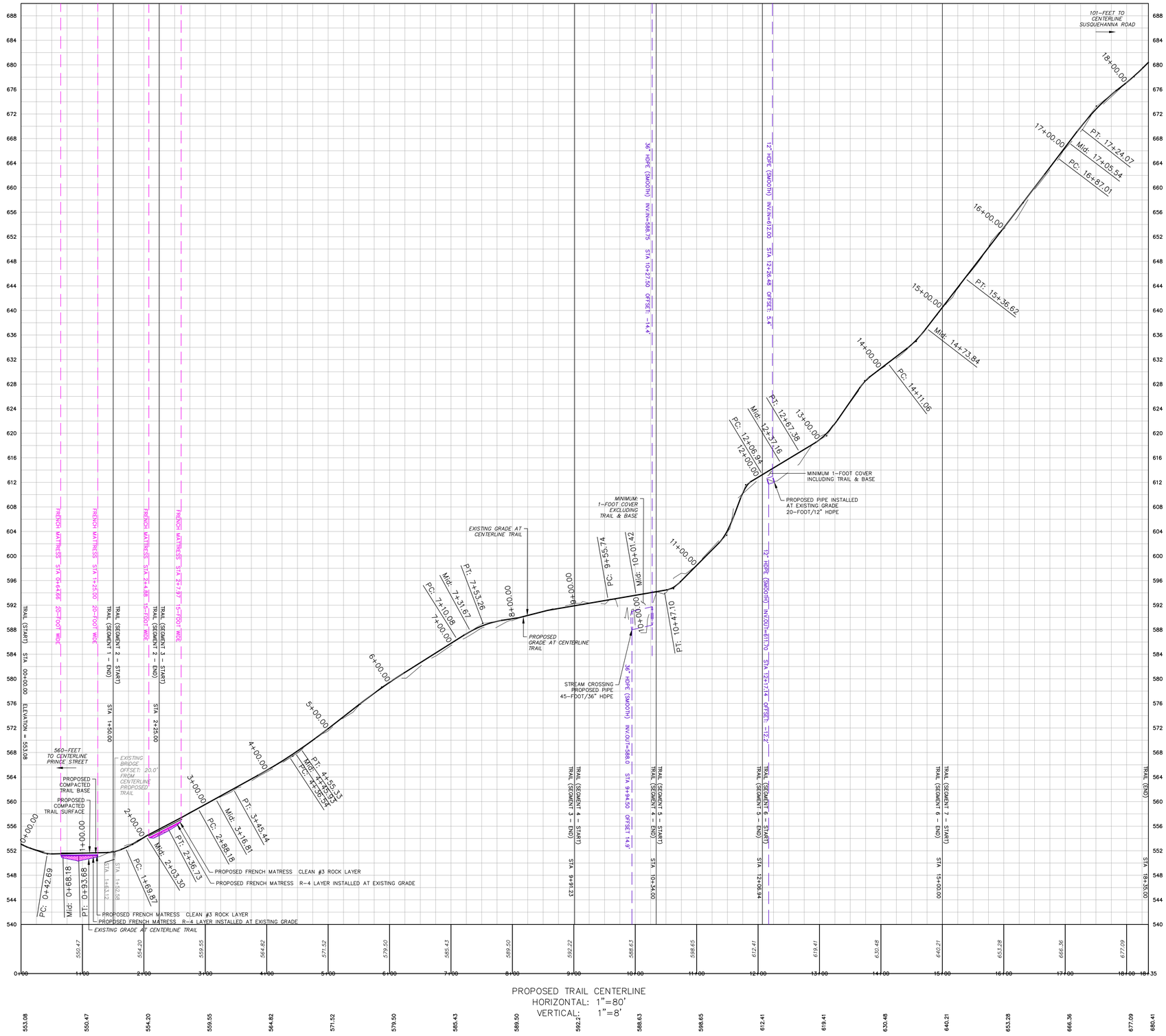
NORTHUMBERLAND BOROUGH

SHEET NAME

OVERALL SITE PLAN

PROJECT NO.	
SSE 15-144	
DATE	
APRIL 08, 2016	
SCALE	SHEET NO.
1:60	S2

PLOTTED: 15 Apr 2016, 5:32 PM



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301 SCIENCE PARK ROAD, SUITE 333
STATE COLLEGE, PA 16803
PH: 814-689-1562
FAX: 814-689-1885
WWW.SSE-LLC.COM

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CHAD E. SHAFFER
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PROJ. MANAGER	CES
FILE	15-144

DATE	DESCRIPTION

REVISIONS

PROJECT NAME

LIBERTY HOLLOW TRAIL

NORTHUMBERLAND BOROUGH

SHEET NAME

OVERALL SITE PLAN PROFILE

PROJECT NO.
SSE 15-144

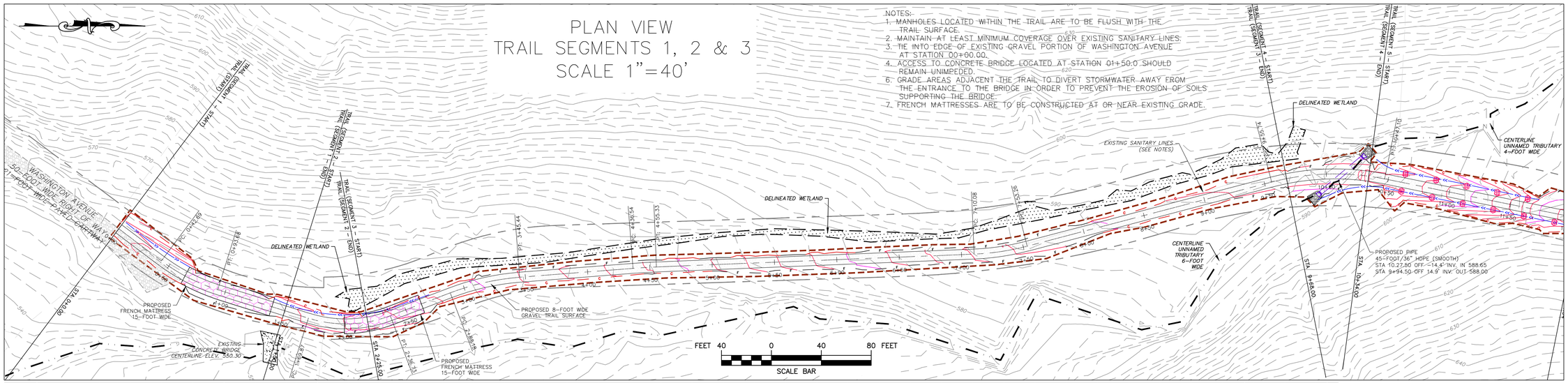
DATE
APRIL 08, 2016

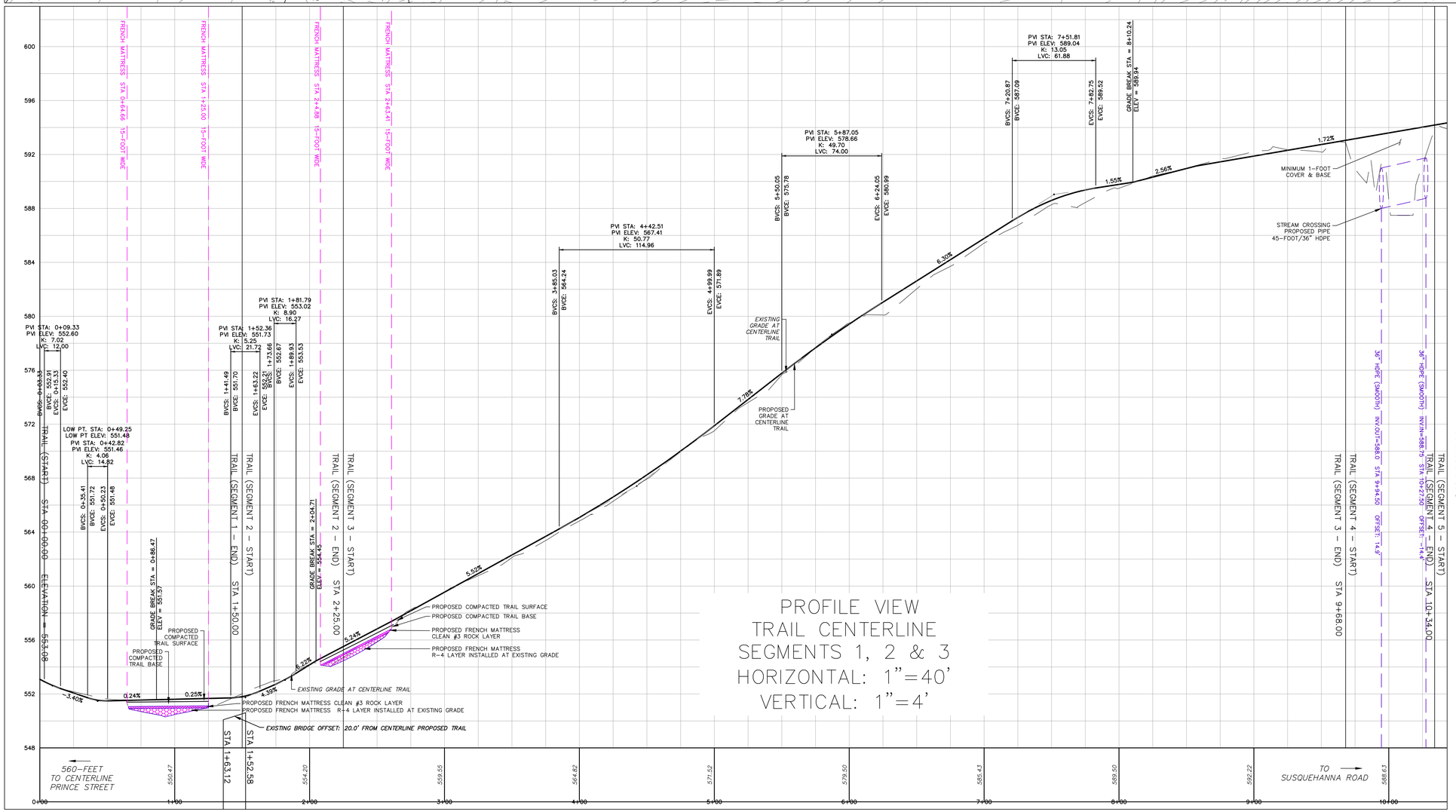
SCALE	SHEET NO.
1:80	S3

PLOTTED: 14 Apr 2016, 3:59 PM

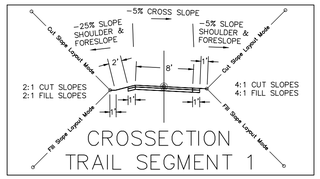
PLAN VIEW
TRAIL SEGMENTS 1, 2 & 3
SCALE 1"=40'

NOTES:
1. MANHOLES LOCATED WITHIN THE TRAIL ARE TO BE FLUSH WITH THE TRAIL SURFACE.
2. MAINTAIN AT LEAST MINIMUM COVERAGE OVER EXISTING SANITARY LINES.
3. TIE INTO EDGE OF EXISTING GRAVEL PORTION OF WASHINGTON AVENUE AT STATION 00+00.00.
4. ACCESS TO CONCRETE BRIDGE LOCATED AT STATION 01+50.0 SHOULD REMAIN UNIMPEDED.
6. GRADE AREAS ADJACENT THE TRAIL TO DIVERT STORMWATER AWAY FROM THE ENTRANCE TO THE BRIDGE IN ORDER TO PREVENT THE EROSION OF SOILS SUPPORTING THE BRIDGE.
7. FRENCH MATTRESSES ARE TO BE CONSTRUCTED AT OR NEAR EXISTING GRADE.



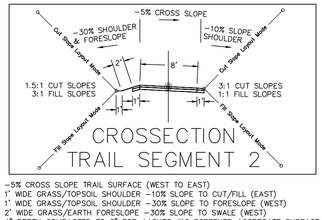


PROFILE VIEW
TRAIL CENTERLINE SEGMENTS 1, 2 & 3
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'



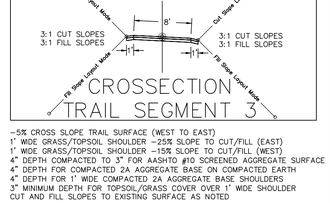
-5% CROSS SLOPE TRAIL SURFACE
1' WIDE GRASS/TOPSOIL SHOULDER -5% SLOPE TO FORESLOPE (EAST)
1' WIDE GRASS/EARTH FORESLOPE -5% SLOPE TO CUT/FILL (EAST)
1' WIDE GRASS/TOPSOIL SHOULDER -25% SLOPE TO FORESLOPE (WEST)
2' WIDE GRASS/EARTH FORESLOPE -25% SLOPE TO SWALE (WEST)
4" DEPTH COMPACTED TO 3" FOR AASHTO #10 SCREENED AGGREGATE SURFACE
4" DEPTH FOR COMPACTED 2A AGGREGATE BASE ON COMPACTED EARTH
4" DEPTH FOR 1' WIDE COMPACTED 2A AGGREGATE BASE SHOULDERS
3" MINIMUM DEPTH FOR TOPSOIL/GRASS COVER OVER 1' WIDE SHOULDER
1' WIDE BOTTOM OF VEGETATED INTERMITTENT SWALE (WEST)
CUT AND FILL SLOPES TO EXISTING SURFACE AS NOTED

FEET 0 10 FEET
SCALE BAR



-5% CROSS SLOPE TRAIL SURFACE (WEST TO EAST)
1' WIDE GRASS/TOPSOIL SHOULDER -10% SLOPE TO CUT/FILL (EAST)
1' WIDE GRASS/TOPSOIL SHOULDER -30% SLOPE TO FORESLOPE (WEST)
2' WIDE GRASS/EARTH FORESLOPE -30% SLOPE TO SWALE (WEST)
4" DEPTH COMPACTED TO 3" FOR AASHTO #10 SCREENED AGGREGATE SURFACE
4" DEPTH FOR COMPACTED 2A AGGREGATE BASE ON COMPACTED EARTH
4" DEPTH FOR 1' WIDE COMPACTED 2A AGGREGATE BASE SHOULDERS
3" MINIMUM DEPTH FOR TOPSOIL/GRASS COVER OVER 1' WIDE SHOULDER
1' WIDE BOTTOM OF VEGETATED INTERMITTENT SWALE (EAST)
CUT AND FILL SLOPES TO EXISTING SURFACE AS NOTED

FEET 0 10 FEET
SCALE BAR



-5% CROSS SLOPE TRAIL SURFACE (WEST TO EAST)
1' WIDE GRASS/TOPSOIL SHOULDER -25% SLOPE TO CUT/FILL (EAST)
1' WIDE GRASS/TOPSOIL SHOULDER -15% SLOPE TO CUT/FILL (WEST)
4" DEPTH COMPACTED TO 3" FOR AASHTO #10 SCREENED AGGREGATE SURFACE
4" DEPTH FOR COMPACTED 2A AGGREGATE BASE ON COMPACTED EARTH
4" DEPTH FOR 1' WIDE COMPACTED 2A AGGREGATE BASE SHOULDERS
3" MINIMUM DEPTH FOR TOPSOIL/GRASS COVER OVER 1' WIDE SHOULDER
CUT AND FILL SLOPES TO EXISTING SURFACE AS NOTED

FEET 0 10 FEET
SCALE BAR

STAHL SHEAFFER ENGINEERING
301 SCIENCE PARK ROAD, SUITE 333
STATE COLLEGE, PA 16803
PH: 814-689-1562
FAX: 814-689-1885
WWW.SSE-LLC.COM

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL LAND SURVEYOR CHRIS E. SHAFFER SU060672

SEAL:

SURVEYOR CES
CADD GWD
DESIGNER CES
PROJ. MANAGER CES
FILE 15-144

DATE	DESCRIPTION

REVISIONS

PROJECT NAME

LIBERTY HOLLOW TRAIL

NORTHUMBERLAND BOROUGH

SHEET NAME

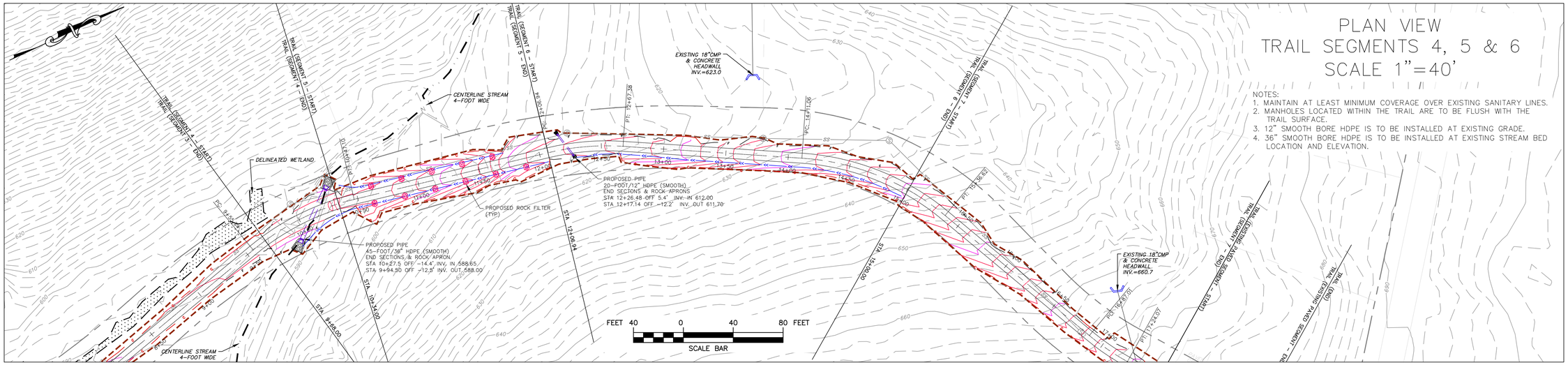
GRADING PLAN, PROFILE & CROSS SECTION TRAIL SEGMENTS 1, 2 & 3

PROJECT NO. SSE 15-144

DATE APRIL 08, 2016

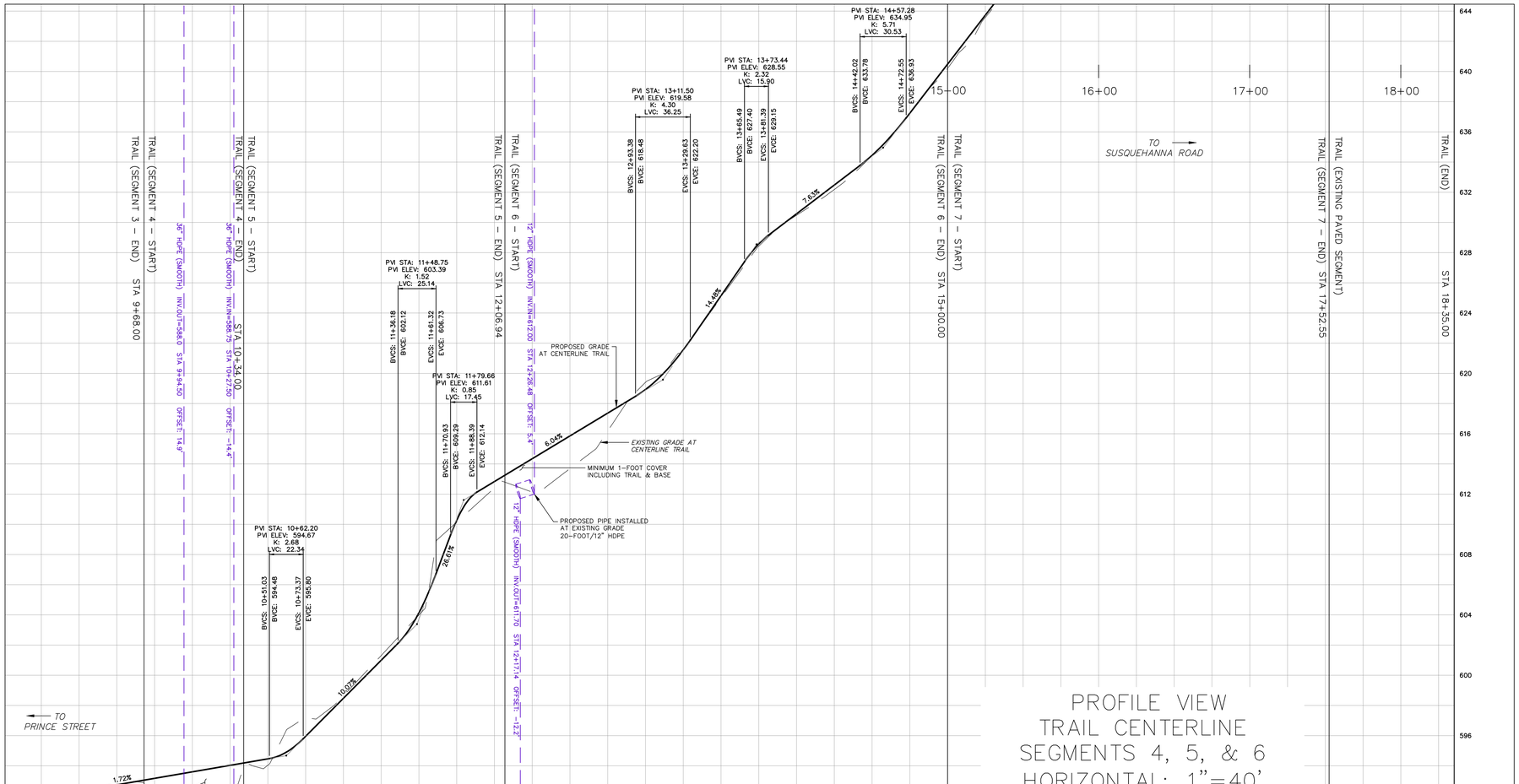
SCALE	SHEET NO.
AS NOTED	PP1

PLOTTED: 15 Apr 2016, 5:43 PM

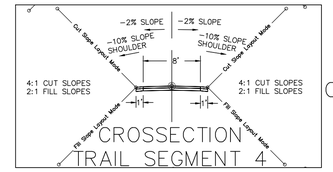


PLAN VIEW
TRAIL SEGMENTS 4, 5 & 6
SCALE 1"=40'

NOTES:
1. MAINTAIN AT LEAST MINIMUM COVERAGE OVER EXISTING SANITARY LINES.
2. MANHOLES LOCATED WITHIN THE TRAIL ARE TO BE FLUSH WITH THE TRAIL SURFACE.
3. 12" SMOOTH BORE HDPE IS TO BE INSTALLED AT EXISTING GRADE.
4. 36" SMOOTH BORE HDPE IS TO BE INSTALLED AT EXISTING STREAM BED LOCATION AND ELEVATION.



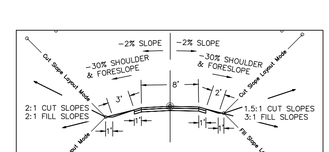
PROFILE VIEW
TRAIL CENTERLINE
SEGMENTS 4, 5, & 6
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'



STREAM CROSSING

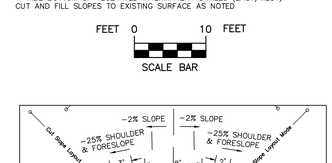
–2% SLOPE FROM CENTERLINE CROWN OF TRAIL SURFACE (EAST/WEST)
1' WIDE GRASS/TOPSOIL SHOULDER –10% SLOPE TO CUT/FILL (EAST/WEST)
4" DEPTH COMPACTED TO 3" FOR AASHTO #10 SCREENED AGGREGATE SURFACE
4" DEPTH FOR COMPACTED 2A AGGREGATE BASE ON COMPACTED EARTH
4" DEPTH FOR 1' WIDE COMPACTED 2A AGGREGATE BASE SHOULDERS
3" MINIMUM DEPTH FOR TOPSOIL/GRASS COVER OVER 1' WIDE SHOULDER
1' MINIMUM COMPACTED EARTH BETWEEN TRAIL BASE AND 36" HDPE AT CROSSING
CUT AND FILL SLOPES TO EXISTING SURFACE AS NOTED
R=5 STONE RIP RAP AND PIPE END SECTIONS TO PROTECT FROM EROSION

FEET 0 10 FEET
SCALE BAR



–2% SLOPE FROM CENTERLINE CROWN OF TRAIL SURFACE (EAST/WEST)
1' WIDE GRASS/TOPSOIL SHOULDER –30% SLOPE TO FORESLOPE (EAST)
1' WIDE GRASS/TOPSOIL SHOULDER –30% SLOPE TO FORESLOPE (WEST)
2' WIDE GRASS/EARTH FORESLOPE –30% SLOPE TO VEGETATED SWALE (EAST)
3' WIDE GRASS/EARTH FORESLOPE –30% SLOPE TO VEGETATED SWALE (WEST)
4" DEPTH COMPACTED TO 3" FOR AASHTO #10 SCREENED AGGREGATE SURFACE
4" DEPTH FOR COMPACTED 2A AGGREGATE BASE ON COMPACTED EARTH
4" DEPTH FOR 1' WIDE COMPACTED 2A AGGREGATE BASE SHOULDERS
3" MINIMUM DEPTH FOR TOPSOIL/GRASS COVER OVER 1' WIDE SHOULDER
1' WIDE BOTTOM OF VEGETATED INTERMITTENT SWALES (EAST/WEST)
CUT AND FILL SLOPES TO EXISTING SURFACE AS NOTED

FEET 0 10 FEET
SCALE BAR



–2% SLOPE FROM CENTERLINE CROWN OF TRAIL SURFACE (EAST/WEST)
1' WIDE GRASS/TOPSOIL SHOULDER –25% SLOPE TO FORESLOPE (EAST)
1' WIDE GRASS/TOPSOIL SHOULDER –25% SLOPE TO FORESLOPE (WEST)
2' WIDE GRASS/EARTH FORESLOPE –25% SLOPE TO VEGETATED SWALE (EAST)
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4" DEPTH COMPACTED TO 3" FOR AASHTO #10 SCREENED AGGREGATE SURFACE
4" DEPTH FOR COMPACTED 2A AGGREGATE BASE ON COMPACTED EARTH
4" DEPTH FOR 1' WIDE COMPACTED 2A AGGREGATE BASE SHOULDERS
3" MINIMUM DEPTH FOR TOPSOIL/GRASS COVER OVER 1' WIDE SHOULDERS
1' WIDE BOTTOM OF VEGETATED INTERMITTENT SWALES (EAST/WEST)
6" MINIMUM COMPACTED EARTH BETWEEN BOTTOM TRAIL BASE AND 12" HDPE
CUT AND FILL SLOPES TO EXISTING SURFACE AS NOTED

FEET 0 10 FEET
SCALE BAR

STAHL SHEAFFER ENGINEERING
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STATE COLLEGE, PA 16803
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FAX: 814-689-1885
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SEAL:

SURVEYOR CES
CADD GWD
DESIGNER CES
PROJ. MANAGER CES
FILE 15-144

DATE	DESCRIPTION

REVISIONS

PROJECT NAME

LIBERTY HOLLOW TRAIL

NORTHUMBERLAND BOROUGH

SHEET NAME

GRADING PLAN, PROFILE & CROSS SECTION TRAIL SEGMENTS 4, 5 & 6

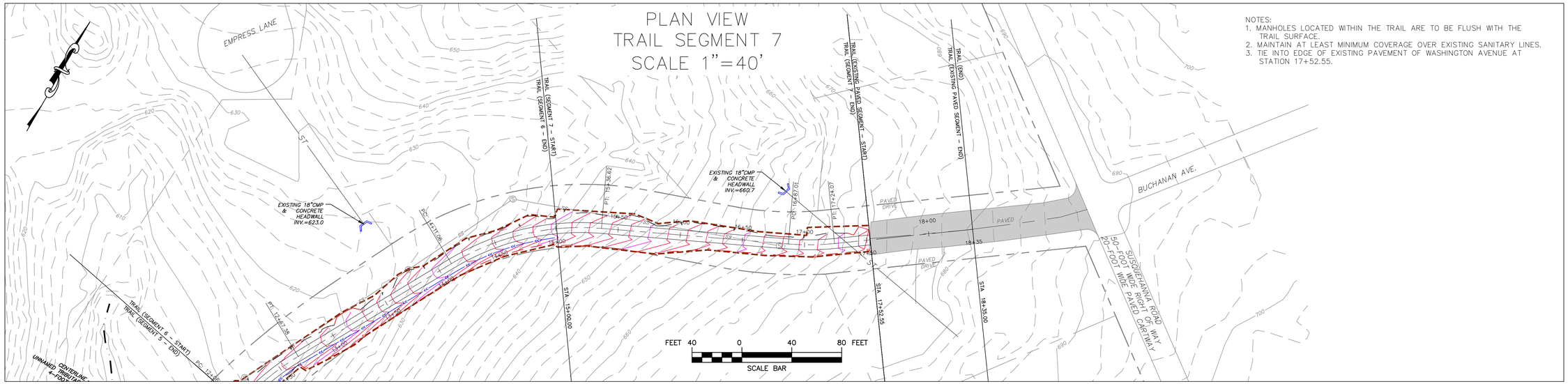
PROJECT NO.
SSE 15-144

DATE
APRIL 08, 2016

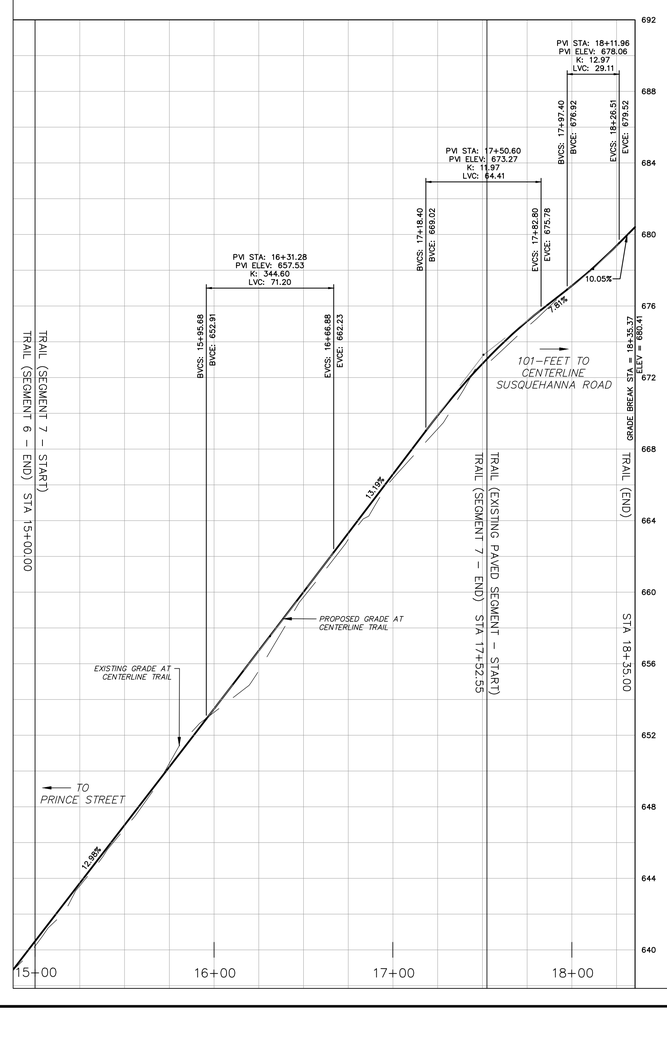
SCALE	SHEET NO.
AS NOTED	PP2

PLOTTED: 15 Apr 2016, 6:10 PM

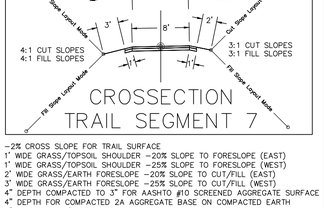
PLAN VIEW
TRAIL SEGMENT 7
SCALE 1"=40'



NOTES:
1. MANHOLES LOCATED WITHIN THE TRAIL ARE TO BE FLUSH WITH THE TRAIL SURFACE.
2. MAINTAIN AT LEAST MINIMUM COVERAGE OVER EXISTING SANITARY LINES.
3. TIE INTO EDGE OF EXISTING PAVEMENT OF WASHINGTON AVENUE AT STATION 17+52.55.



PROFILE VIEW
TRAIL CENTERLINE
SEGMENT 7
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'



-2% CROSS SLOPE FOR TRAIL SURFACE
1' WIDE GRASS/TOPSOIL SHOULDER -20% SLOPE TO FORESLOPE (EAST)
1' WIDE GRASS/TOPSOIL SHOULDER -25% SLOPE TO FORESLOPE (WEST)
2' WIDE GRASS/EARTH FORESLOPE -20% SLOPE TO CUT/FILL (EAST)
3' WIDE GRASS/EARTH FORESLOPE -25% SLOPE TO CUT/FILL (WEST)
4" DEPTH COMPACTED TO 3" FOR AASHTO #10 SCREENED AGGREGATE SURFACE
4" DEPTH FOR COMPACTED 2A AGGREGATE BASE ON COMPACTED EARTH
4" DEPTH FOR 1' WIDE COMPACTED 2A AGGREGATE BASE SHOULDERS
3" MINIMUM DEPTH FOR TOPSOIL/GRASS COVER OVER 1' WIDE SHOULDERS
CUT AND FILL SLOPES TO EXISTING SURFACE AS NOTED

FEET 0 10 FEET
SCALE BAR

STAHL SHEAFFER ENGINEERING
301 SCIENCE PARK ROAD, SUITE 333
STATE COLLEGE, PA 16803
PH: 814-689-1562
FAX: 814-689-1885
WWW.SSE-LLC.COM

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHAD E. SHAFFER
LAND SURVEYOR
SU060672

SEAL:

SURVEYOR CES
CADD GWD
DESIGNER CES
PROJ. MANAGER CES
FILE 15-144

DATE DESCRIPTION
REVISIONS

PROJECT NAME

LIBERTY HOLLOW TRAIL

NORTHUMBERLAND BOROUGH

SHEET NAME

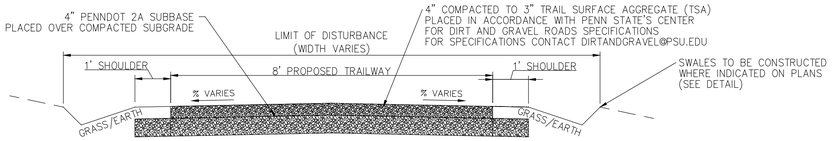
GRADING PLAN, PROFILE & CROSS SECTION TRAIL SEGMENT 7

PROJECT NO.
SSE 15-144

DATE
APRIL 08, 2016

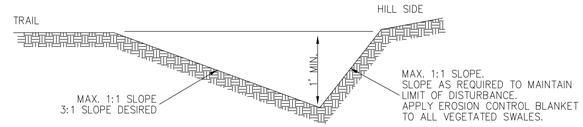
SCALE	SHEET NO.
AS NOTED	PP3

PLOTTED: 13 Apr 2016, 6:04 PM



TYPICAL TRAIL CROSS SECTION

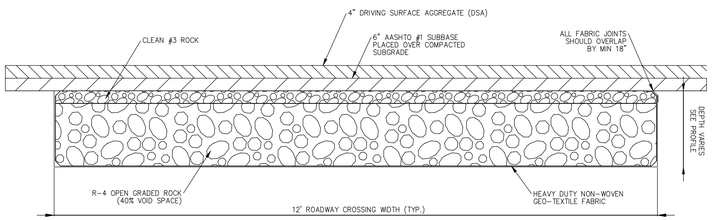
NOT TO SCALE



MAINTENANCE NOTE: PERFORM DITCH CLEANING AS REQUIRED TO INSURE 1' MIN. DEPTH.
RESEED ALL DISTURBED AREAS AND FOLLOW SEEDING NOTES.

TYPICAL VEGETATED SWALE DETAIL

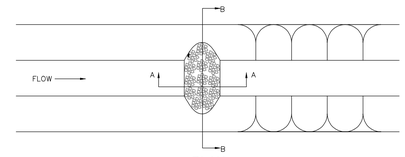
NOT TO SCALE



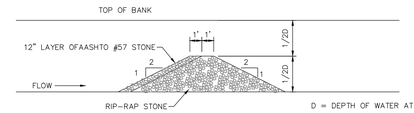
1. LENGTH SHOULD BE SUCH THAT THE STRUCTURE DAYLIGHTS INTO DITCH ON EACH SIDE OF CROSSING.
2. USE BEDDING MATERIAL IF NECESSARY TO PROTECT FABRIC.
3. PLACE LAYER OF SMALLER STONE (#3) ON TOP OF R-4 WITHOUT INTERMIXING.
4. WRAP ENDS OF LOWER FABRIC UP ON TOP OF STRUCTURE.
5. THERE MUST BE A MINIMUM OF 6 INCHES OF COMPACTED MATERIAL ABOVE THE GEOTEXTILE FABRIC ENCASING THE FRENCH MATTRESS.

TYPICAL FRENCH MATTRESS DETAIL

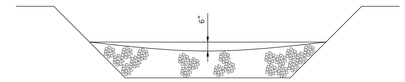
NOT TO SCALE



PLAN



SECTION A–A



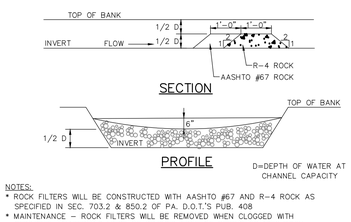
SECTION B–B

ROCK FILTER NO.	LOCATION	D (FT.)	RIP-RAP SIZE
1–5	SWALE WEST, SEGMENT 5	1.0	R–3
6–11	SWALE EAST, SEGMENT 5	1.0	R–3

MAINTENANCE NOTES:
1. ROCK FILTERS SHOULD BE INSPECTED WEEKLY AND AFTER EACH RUN-OFF EVENT. NEEDED REPAIRS SHOULD BE INITIATED IMMEDIATELY AFTER THE INSPECTION.
2. IF FILTER STONE (AASHTO #57) BECOMES CLOGGED, IMMEDIATELY (1) REPLACE WITH NEW STONE, OR (2) REMOVE, WASH AND REPLACE STONE. FILTER CLEANING OR REPLACEMENT SHALL BE DONE ON A DAY WHEN THERE IS NO PRECIPITATION A SUPPLY OF STONE SHALL BE MAINTAINED ON SITE FOR REPLACEMENT.
3. REMOVE SEDIMENT WHEN IT ACCUMULATES A DEPTH 1/2 OF THE HEIGHT OF THE FILTER. PLACE SEDIMENT ON TOPSOIL STOCKPILE.
4. IMMEDIATELY UPON PERMANENT STABILIZATION OF EACH CHANNEL, REMOVE ACCUMULATED SEDIMENT, REMOVE ROCK FILTER AND STABILIZE DISTURBED AREAS.

ROCK FILTER IN SWALE DETAIL

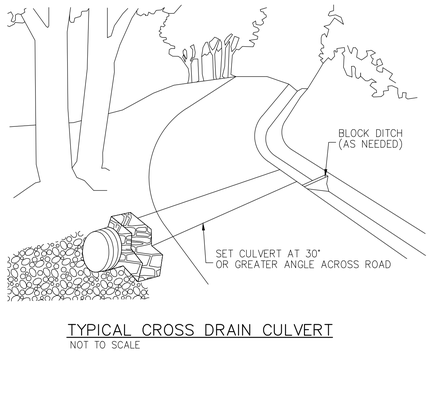
NOT TO SCALE



NOTES:
* ROCK FILTERS WILL BE CONSTRUCTED WITH AASHTO #67 AND R-4 ROCK AS SPECIFIED IN SEC. 703.2 & 850.2 OF PA. D.O.T.'S PUB. 408
* MAINTENANCE – ROCK FILTERS WILL BE REMOVED WHEN CLOGGED WITH SEDIMENT. MATERIALS MUST BE WASHED FREE OF BEBRIS OR NEW ROCK USED TO REBUILD FILTER.

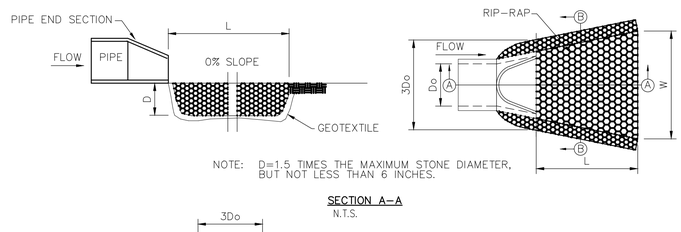
TYPICAL CHANNEL ROCK FILTER DETAIL

NOT TO SCALE



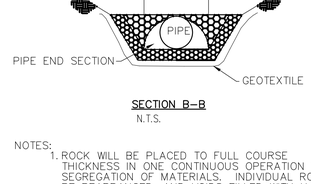
TYPICAL CROSS DRAIN CULVERT

NOT TO SCALE



NOTE: D=1.5 TIMES THE MAXIMUM STONE DIAMETER, BUT NOT LESS THAN 6 INCHES.

SECTION A–A
N.T.S.



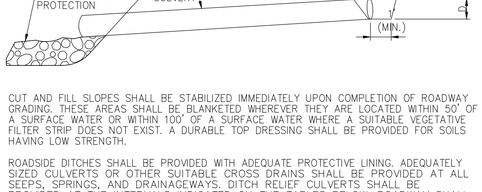
SECTION B–B
N.T.S.

OUTLET STRUCTURE DESIGNATION	W (FT)	L (FT)	SIZE OF ROCK	MIN ROCK DEPTH (D)
12" HDPE	12.0	9.0	R–3	12"
36" HDPE	39.0	30.0	R–6	30"

NOTES:
1. ROCK WILL BE PLACED TO FULL COURSE THICKNESS IN ONE CONTINUOUS OPERATION TO PREVENT SEGREGATION OF MATERIALS. INDIVIDUAL ROCKS MAY BE REARRANGED, AND VOIDS FILLED WITH HAND PLACED SMALLER ROCK, TO ACHEIVE A UNIFORM ROCK BLANKET.
2. NO ROCK PIECES SHALL HAVE A LENGTH EXCEEDING THREE TIMES ITS WIDTH OR DEPTH.
3. ROCK SHALL BE ANGULAR, CRUSHED AND HAVE A UNIT WEIGHT OF 165 LBS./C.F.

TYPICAL RIP-RAP APRON DETAIL

NOT TO SCALE

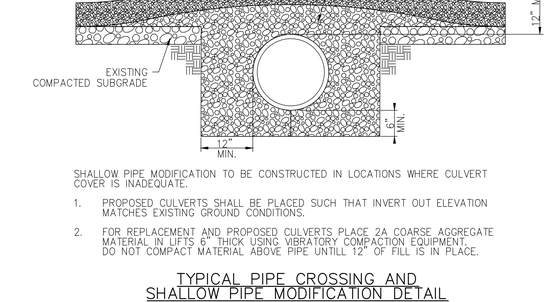


CUT AND FILL SLOPES SHALL BE STABILIZED IMMEDIATELY UPON COMPLETION OF ROADWAY GRADING. THESE AREAS SHALL BE BLANKETED WHEREVER THEY ARE LOCATED WITHIN 50' OF A SURFACE WATER OR WITHIN 100' OF A SURFACE WATER WHERE A SUITABLE VEGETATIVE FILTER STRIP DOES NOT EXIST. A DURABLE TOP DRESSING SHALL BE PROVIDED FOR SOILS HAVING LOW STRENGTH.

ROADSIDE DITCHES SHALL BE PROVIDED WITH ADEQUATE PROTECTIVE LINING. ADEQUATELY SIZED CULVERTS OR OTHER SUITABLE CROSS DRAINS SHALL BE PROVIDED AT ALL SEEPS, SPRINGS, AND DRAINAGEWAYS. DITCH RELIEF CULVERTS SHALL BE PROVIDED AT THE INTERVALS INDICATED ON THE TABLES BELOW. ROADWAY SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED ROADWAYS, DITCHES, OR CROSS DRAINS SHALL BE REPAIRED IMMEDIATELY.

TYPICAL CROWNED / INSLOPED TRAIL DETAIL

NOT TO SCALE



SHALLOW PIPE MODIFICATION TO BE CONSTRUCTED IN LOCATIONS WHERE CULVERT COVER IS INADEQUATE.

1. PROPOSED CULVERTS SHALL BE PLACED SUCH THAT INVERT OUT ELEVATION MATCHES EXISTING GROUND CONDITIONS.
2. FOR REPLACEMENT AND PROPOSED CULVERTS PLACE 2A COARSE AGGREGATE MATERIAL IN LIFTS 6" THICK USING VIBRATORY COMPACTION EQUIPMENT. DO NOT COMPACT MATERIAL ABOVE PIPE UNTILL 12" OF FILL IS IN PLACE.

TYPICAL PIPE CROSSING AND SHALLOW PIPE MODIFICATION DETAIL

NOT TO SCALE

STAHL SHEAFFER ENGINEERING
301 SCIENCE PARK ROAD, SUITE 333
STATE COLLEGE, PA 16803
PH: 814-689-1562
FAX: 814-689-1885
WWW.SSE-LLC.COM

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHAD E. SHAFFER
LAND SURVEYOR
SU060672

SEAL:

SURVEYOR CES
CADD GWD
DESIGNER CES
PROJ. MANAGER CES
FILE 15-144

DATE DESCRIPTION
REVISIONS

PROJECT NAME

LIBERTY HOLLOW TRAIL

NORTHUMBERLAND BOROUGH

SHEET NAME

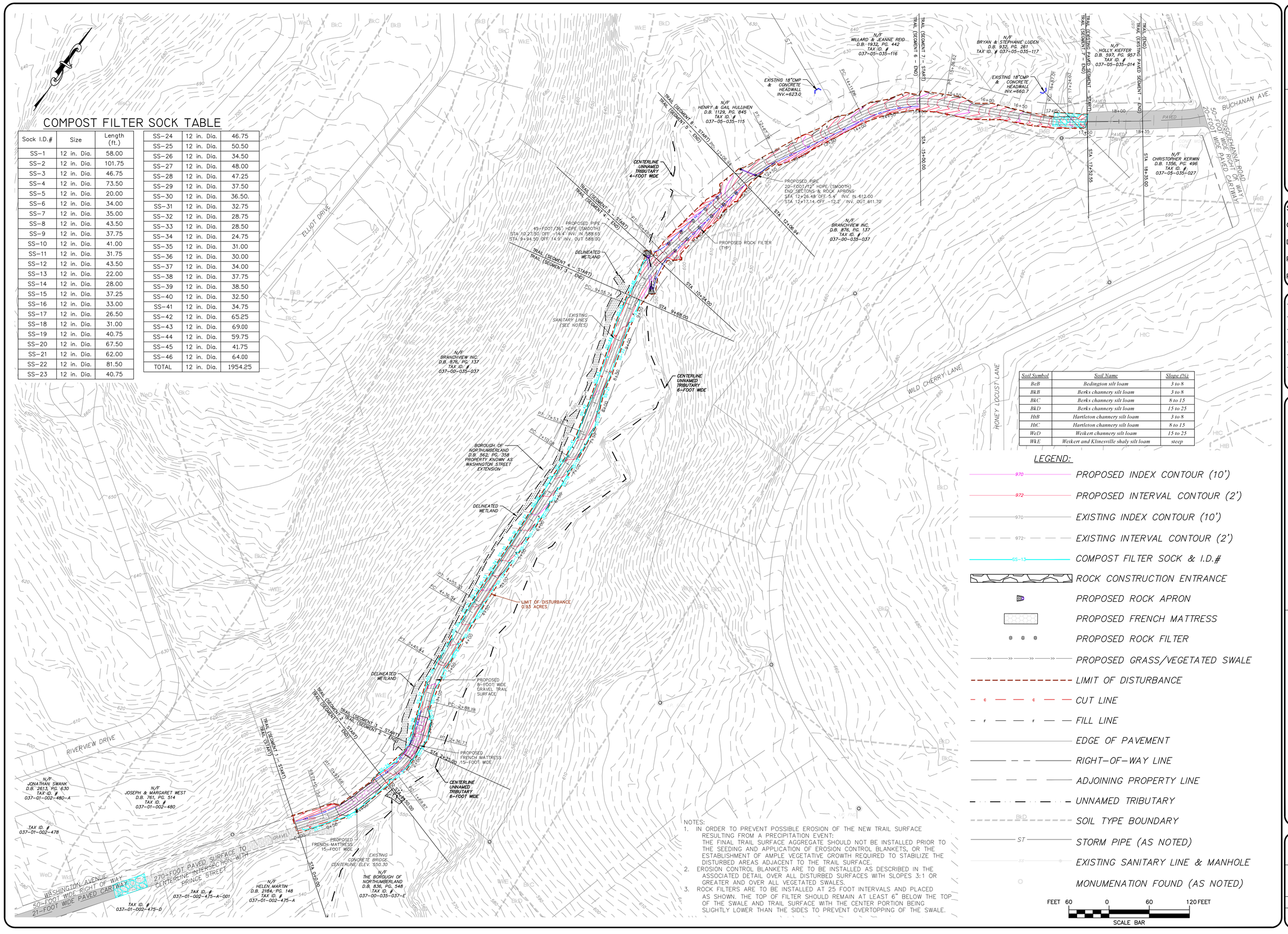
DETAILS

PROJECT NO.
SSE 15-144

DATE
APRIL 08, 2016

SCALE	SHEET NO.
AS NOTED	D1

PLOTTED: 14 Apr 2016, 2:27 PM



COMPOST FILTER SOCK TABLE

Sock I.D.#	Size	Length (ft.)
SS-1	12 in. Dia.	58.00
SS-2	12 in. Dia.	101.75
SS-3	12 in. Dia.	46.75
SS-4	12 in. Dia.	73.50
SS-5	12 in. Dia.	20.00
SS-6	12 in. Dia.	34.00
SS-7	12 in. Dia.	35.00
SS-8	12 in. Dia.	43.50
SS-9	12 in. Dia.	37.75
SS-10	12 in. Dia.	41.00
SS-11	12 in. Dia.	31.75
SS-12	12 in. Dia.	43.50
SS-13	12 in. Dia.	22.00
SS-14	12 in. Dia.	28.00
SS-15	12 in. Dia.	37.25
SS-16	12 in. Dia.	33.00
SS-17	12 in. Dia.	26.50
SS-18	12 in. Dia.	31.00
SS-19	12 in. Dia.	40.75
SS-20	12 in. Dia.	67.50
SS-21	12 in. Dia.	62.00
SS-22	12 in. Dia.	81.50
SS-23	12 in. Dia.	40.75
SS-24	12 in. Dia.	46.75
SS-25	12 in. Dia.	50.50
SS-26	12 in. Dia.	34.50
SS-27	12 in. Dia.	48.00
SS-28	12 in. Dia.	47.25
SS-29	12 in. Dia.	37.50
SS-30	12 in. Dia.	36.50.
SS-31	12 in. Dia.	32.75
SS-32	12 in. Dia.	28.75
SS-33	12 in. Dia.	28.50
SS-34	12 in. Dia.	24.75
SS-35	12 in. Dia.	31.00
SS-36	12 in. Dia.	30.00
SS-37	12 in. Dia.	34.00
SS-38	12 in. Dia.	37.75
SS-39	12 in. Dia.	38.50
SS-40	12 in. Dia.	32.50
SS-41	12 in. Dia.	34.75
SS-42	12 in. Dia.	65.25
SS-43	12 in. Dia.	69.00
SS-44	12 in. Dia.	59.75
SS-45	12 in. Dia.	41.75
SS-46	12 in. Dia.	64.00
TOTAL	12 in. Dia.	1954.25

Soil Symbol	Soil Name	Slope (%)
BeB	Bedington silt loam	3 to 8
BkB	Berks channery silt loam	3 to 8
BkC	Berks channery silt loam	8 to 15
BkD	Berks channery silt loam	15 to 25
HtB	Hartleton channery silt loam	3 to 8
HtC	Hartleton channery silt loam	8 to 15
WeD	Weikert channery silt loam	15 to 25
WkE	Weikert and Klinesville shaly silt loam	steep

LEGEND:

- PROPOSED INDEX CONTOUR (10')
- PROPOSED INTERVAL CONTOUR (2')
- EXISTING INDEX CONTOUR (10')
- EXISTING INTERVAL CONTOUR (2')
- COMPOST FILTER SOCK & I.D.#
- ROCK CONSTRUCTION ENTRANCE
- PROPOSED ROCK APRON
- PROPOSED FRENCH MATTRESS
- PROPOSED ROCK FILTER
- PROPOSED GRASS/VEGETATED SWALE
- LIMIT OF DISTURBANCE
- CUT LINE
- FILL LINE
- EDGE OF PAVEMENT
- RIGHT-OF-WAY LINE
- ADJOINING PROPERTY LINE
- UNNAMED TRIBUTARY
- SOIL TYPE BOUNDARY
- STORM PIPE (AS NOTED)
- EXISTING SANITARY LINE & MANHOLE
- MONUMENATION FOUND (AS NOTED)

FEET 60 0 60 120 FEET
SCALE BAR

NOTES:

1. IN ORDER TO PREVENT POSSIBLE EROSION OF THE NEW TRAIL SURFACE RESULTING FROM A PRECIPITATION EVENT:
   THE FINAL TRAIL SURFACE AGGREGATE SHOULD NOT BE INSTALLED PRIOR TO THE SEEDING AND APPLICATION OF EROSION CONTROL BLANKETS, OR THE ESTABLISHMENT OF AMPLE VEGETATIVE GROWTH REQUIRED TO STABILIZE THE DISTURBED AREAS ADJACENT TO THE TRAIL SURFACE.
2. EROSION CONTROL BLANKETS ARE TO BE INSTALLED AS DESCRIBED IN THE ASSOCIATED DETAIL OVER ALL DISTURBED SURFACES WITH SLOPES 3:1 OR GREATER AND OVER ALL VEGETATED SWALES.
3. ROCK FILTERS ARE TO BE INSTALLED AT 25 FOOT INTERVALS AND PLACED AS SHOWN. THE TOP OF FILTER SHOULD REMAIN AT LEAST 6" BELOW THE TOP OF THE SWALE AND TRAIL SURFACE WITH THE CENTER PORTION BEING SLIGHTLY LOWER THAN THE SIDES TO PREVENT OVERTOPPING OF THE SWALE.

STAHL SHEAFFER ENGINEERING
301 SCIENCE PARK ROAD, SUITE 333
STATE COLLEGE, PA 16803
PH: 814-689-1562
FAX: 814-689-1885
WWW.SSE-LLC.COM

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL LAND SURVEYOR CHRIS E. SHAFFER SU060672

SEAL:

SURVEYOR CES
CADD GWD
DESIGNER CES
PROJ. MANAGER CES
FILE 15-144

DATE DESCRIPTION
REVISIONS

PROJECT NAME

LIBERTY HOLLOW TRAIL

NORTHUMBERLAND BOROUGH

SHEET NAME

EROSION AND SEDIMENTATION CONTROL PLAN

PROJECT NO. SSE 15-144
DATE APRIL 08, 2016
SCALE 1:60
SHEET NO. ES1

PLOTTED: 15 Apr 2016, 6:06 PM

SEQUENCE OF CONSTRUCTION FOR EROSION AND SEDIMENTATION CONTROL

1. Stake out limit of disturbance and establish areas to be graded preserving as much natural vegetation as practical.
2. Install the rock construction entrance(s) as shown on the contract drawings. all construction traffic shall enter/exit via rock construction entrance(s).
3. Material stockpiles are to be placed within the disturbed area along the trail in accordance with detail sheet and Best Management Practices. The material stockpiles may be moved along the trail as required to allow for construction activities.
4. Trailway to be completed in stages to limit the amount of total disturbance at any time during construction. contractor to adjust length of each stage such that disturbed areas will not be stagnant for longer than four (4) days. each stage should be completed as described below insuring disturbed areas are immediately protected. refer to seeding notes below for protection guidelines.
5. Install erosion and sediment pollution controls, specifically any rip rap and diversion or silt socks on the downstream side of any earth disturbance and along delineated wetlands as depicted on the plans prior to commencement of any clearing or construction activities.
6. Install the 12" HDPE and rip rap aprons located within trail segment 4, the french mattresses located in trail segments 1 through 3 and construct and seed all swales.
7. Prepare and protect stream crossing for culvert installation following all E&S controls and Best Management Practices. Install 36" diameter HDPE pipe per construction documents.
8. After grass/vegetation is established in sufficient quantity to stabilize the previous earth disturbance, begin clearing and grubbing the proposed trailway areas and arrange the material in a windrow on the low side of the road to capture runoff.
9. Establish a rough graded section of the proposed gravel trailway including shoulders and foreslopes not previously constructed with the swales.
10. Fine grade trail and roadside swales and apply 2:1 native soil:compost amended to all disturbed areas not to be overlain with the trail surface aggregate. immediately apply erosion control blanket as described on detail sheet.
11. To prevent possible erosion of the new trail surface, the trail surface aggregate should not be applied prior to seeding and installation of the erosion control blanket over disturbed areas adjacent to the trail surface. The trail surface should be protected by ample vegetative growth to stabilize the adjacent areas and prevent erosion prior to any major precipitation event.
12. Seeding notes:
    A. If soils are compacted, scarify 6" min. before applying seed mix. compaction should be minimized as much as possible.
    B. Each stage length should be chosen such that any cessation of earth disturbance activities will not exceed four (4) days. if disturbance in an area is expected to cease for longer than four (4) days, apply temporary cover immediately.
    C. Apply temporary cover to all disturbed areas where activities will not resume within four (4) days.
    D. Apply permanent seed mixture to all final graded areas immediately.
    E. Apply mulch to all temporary stockpile areas.
    F. Soil amendments including lime and fertilizer shall be applied in accordance with PENNDOT publication 408, section 804 using material, species, and rates as specified in typical site stabilization detail.
13. After permanent seeding and stabilization materials have been installed, continue with steps 4–10 of next stage.
14. Upon 70% vegetation cover of erosion resistant perennial species in the areas tributary to the sock, remove any accumulated sediment from the bottom of the silt socks, 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.
15. Remove rock construction entrance(s) not previously removed to accommodate construction of the northerly portion of the trail.
16. Bmp's must be properly maintained both during and post construction. The maintenance program must provide for the inspection and the repair of the bmp's to ensure adequate operation. Bmps should be inspected after each runoff event and on a weekly basis. See maintenance notes for each bmp on detail sheet. The contractor shall maintain an erosion and sedimentation control inspection log sheet to document each inspection and all bmp repair, or replacement and maintenance activities. The log sheet shall be made available to any regulatory agency official at the time of inspection or their request.

EROSION AND SEDIMENT CONTROL PLAN STANDARD NOTES:

1. Topsoil stockpile heights shall not exceed 35 feet. Stockpile sides must be 2:1 or flatter.
2. A copy of the approved erosion and sediment control plan must be available at the project site at all times.
3. The operator shall assure that the approved erosion and sediment control plan is properly and completely implemented.
4. Before initiating any revisions to the approved erosion and sediment control plan or revisions to other plans which may affect the effectiveness of the approved E&S control plan, the operator must receive approval of the revisions from the Northumberland County Conservation District.
5. The contractor shall invite a representative from the Northumberland County Conservation District to attend the preconstruction meeting and provide at least 7 days notice of the preconstruction meeting to all invited attendees. Permittees, co-permittees, operators, and licensed professionals or designees responsible for the earth disturbance activity, including implementation of E&S Plans and critical stages of implementation of the Plan, shall attend a preconstruction meeting.
6. At least 3 days before starting any earth disturbance activities, all contractors involved in those activities shall notify the Pennsylvania One Call System Incorporated at 1-800-242-1776 for the location of existing underground utilities.
7. All earth disturbance activities shall proceed in accordance with the preceeding sequence. Each stage shall be completed and immediately stabilized before any following stage is initiated. Clearing, grubbing, and topsoil stripping shall be limited only to those areas described in each stage.
8. Soil compaction will be minimized by limiting the amount of construction activity on disturbed earth and spreading of topsoil with smaller equipment.
9. The permittee and co-permittee must ensure that visual site inspectors are conducted weekly, and after each measurable precipitation event by qualified personnel, trained and experienced in erosion and sediment control, to ascertain that the Erosion and Sediment Control (E&S) BMP's are operational and effective in preventing pollution to the waters of the Commonwealth. A written report of each inspection shall be kept, and include:
    a) a summary of the site conditions, E&S BMP's, and compliance's; and
    b) the date, time, and the name of the person conducting the inspection.
10. Immediately upon discovering unforseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the operator shall implement appropriate best management practices to eliminate the potential for accelerated erosion and/or sediment pollution.
11. All pumping of sediment laden water shall be through a sediment control BMP, such as a pumped water filter bag or equivalent sediment removal facility, over undisturbed vegetated areas.
12. Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operators shall contact the Northumberland County Conservation District for an inspection prior to removal of the BMP's.
13. Upon completion of all earth disturbance activities, removal of all temporary BMP's and permanent stabilization of all disturbed areas, the owner and/or operators shall contact the Northumberland County Conservation District for a final inspection.
14. Permanent stabilization is defined as a minimum uniform 70% perennial vegetative cover or other permanent cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.
15. Upon temporary cessation of an earth disturbance activity or any stage or phase of an activity where a cessation of earth disturbance activities will exceed 4 days, the site shall be immediately seeded, mulched, or otherwise protected from accelerated erosion and sedimentation pending future earth disturbance activities.
16. An erosion control blanket will be installed on all disturbed slopes steeper than 3:1, all areas of concentrated flows, and disturbed areas within 50' of Waters of the Commonwealth.
17. Until the site is stabilized, all erosion and sediment control BMP's must be maintained properly. Maintenance must include inspections of all erosion and sediment control BMP's after each runoff event and on a weekly basis. All preventative and remedial maintenance work, including, repair, replacement, re-grading, reseeding, re-mulching and re-netting must be performed immediately. If erosion and sediment control BMP's fail to perform as expected, replacement BMP's or modifications of those installed will be required. The Contractor shall maintain an Erosion and Sedimentation Control Inspection Log Sheet to document each inspection and all BMP repair, or replacement and maintenance activities. The Log Sheet shall be made available to any regulatory agency official at the time of inspection or their request.
18. Sediment removed from BMP's shall be disposed of in landscaped areas outside of steep slopes, wetlands, floodplains, or drainage swales and immediately stabilized, or placed in topsoil stockpiles.
19. All building materials and wastes must 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.
20. The contractor will be responsible for the removal of any excess material and make sure the site(s) receiving the excess has an approved erosion and sediment control plan that meets the conditions of Chapter 102 and/or other State or Federal regulations.
20. The Contractor shall prepare and implement a Preparedness, Prevention and Contingency (PPC) Plan when storing, using or transporting material including: fuels, chemicals, solvents, pesticides, fertilizers, lime, petrochemicals, wastewater, wash water, core drilling wastewater, cement, sanitary wastes, solid wastes, or hazardous material onto, on or from the site. The PPC plan shall be available upon request by regulatory agencies.

STANDARD EROSION AND SEDIMENT CONTROL PLAN 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 owner and/or operator 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 the critical stages of implementation of the PCSM plan, and a representative from the Northumberland County Conservation District to an on site preconstruction meeting.
3. At least 3 days prior to starting any earth disturbing activities, or expanding into an area previously unmarked, the Pennsylvania One Call System Incorporated shall be notified at 1-800-242-1776 for the location of existing underground utilities.
4. 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 Northumberland Conservation District or by DEP prior to implementation.
5. Areas to be filled are to be cleared, grubbed and stripped of topsoil to remove trees, vegetation, roots and other objectionable material.
6. 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 BMP's specified by the BMP sequence for that stage or phase have been installed and are functioning as described in the E&S plan.
7. 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.
8. Topsoil required for the establishment of vegetation shall be stockpiled at the location(s) shown on the plan map(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 35 feet. Stockpile slopes shall be 2:1 or flatter.
9. 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 Northumberland Conservation District and/or the regional office of the Department to determine if a plan revision is required.
10. 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.
11. All off-site waste and borrow areas must have an E&S plan, approved by the Northumberland Conservation District or the department, fully implemented prior to being activated.
12. The contractor is responsible for ensuring that any material brought on the site is clean fill form FP-001 must be retained by the property owner for any fill material affected by a spill or release of a regulated substance but qualifying as clean fill due to analytical testing.
13. All pumping of sediment laden water from any work area over undisturbed vegetated areas shall be done according to the procedure(s) described in this plan or sediment control BMP, such as a pumped water filter bag or equivalent sediment removal facility.
14. Vehicles and equipment must enter and exit the proposed site via the rock construction entrance only.
15. Until the site is stabilized, all erosion and sediment BMP's shall be maintained properly. Maintenance shall include inspections of all erosion and sediment BMP's after each runoff event and on a weekly basis. All preventative and remedial maintenance work, including clean out, repair, replacement, regarding, reseeding, remulching and renetting must be performed immediately. If the E&S BMP's fail to perform as expected, replacement BMP's, or modifications of those installed will be required.
16. A log showing dates that E&S BMP's 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.
17. 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 a 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.
18. All sediment removed from BMP's shall be disposed of in the manner described on the plan drawings.
19. 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 of 4 inches of topsoil in place prior to seeding and mulching. Fill outslopes shall have a minimum of 2 inches of topsoil.
20. 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.
21. All earthen fills shall be placed in compacted layers not to exceed 9 inches in thickness.
22. 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.
23. Frozen materials or soft, mucky, or highly compressible materials shall not be incorporated into fills.
24. Fill shall not be placed on saturated or frozen surfaces.
25. Seeps or springs encountered during construction shall be handled in accordance with the standard and specification for subsurface drain or other approved method.
26. All graded areas shall be permanently stabilized immediately upon reaching finish 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.
27. 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 finish 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.
28. 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.
29. E&S BMP's 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 Northumberland Conservation District or the Department.
30. Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operator shall contact the Northumberland Conservation District for an inspection prior to removal/conversion of the E&S BMP's.
31. After final site stabilization has been achieved, temporary erosion and sediment BMP's must be removed or converted to permanent postconstruction stormwater management BMP's. Areas disturbed during removal or conversion of the BMP's shall be stabilized immediately. In order to ensure rapid revegetation of disturbed areas, such removal/conversions are to be done only during the germination season.
32. Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operator shall contact the Northumberland Conservation District to schedule a final inspection.
33. Failure to correctly install E&S BMP's, failure to prevent sediment-laden runoff from leaving the construction site, or failure to take immediate corrective action to resolve failure of E&S BMP's 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.

STORMWATER FACILITIES MAINTENANCE PROGRAM

The owner shall be responsible for ensuring the proper operation and function of the stormwater facilities located on the property. The operation and maintenance program shall include the following:

1. Stormwater facilities should be inspected by the land owner or the owner's designated responsible entity on the following basis:
    A. Annually
    B. During or immediately after every ten-year or greater storm event.

2. Documentation of inspections must be maintained by the owner and submitted to the Borough upon request. Maintenance inspections may be performed by the Borough to ensure proper functioning of all stormwater facilities.

3. If the Borough determines at any time that any permanent stormwater facility has been eliminated, altered or improperly maintained, the owner of the property shall be advised of corrective measures required and given 7 days to initiate appropriate action in accordance with a time schedule dictated by the Borough. If such action is not taken by the property owner, the Borough may cause the work to be done and charge all costs to the property owner.

GENERAL EROSION AND SEDIMENTATION CONTROL METHODS/PROCEDURES

In all cases the smallest practical area of land surfaces shall be disturbed.

Erosion and sedimentation controls must be constructed, stabilized, and functional before site disturbance within the tributary areas of those controls.

All sediment shall be prevented from entering any existing storm drain or ditch through use of filter fabric fence, sediment traps, straw blankets, and rock filters.

All construction traffic shall enter and exit the site via the proposed rock construction entrance.

MAINTENANCE OF EROSION AND SEDIMENTATION CONTROL FACILITIES

All erosion and sedimentation control facilities must be maintained in operating condition including replacement of plugged sediment sock, until upstream areas are stabilized with a minimum 70% uniform vegetative cover.

Erosion and sedimentation control devices shall be inspected after each runoff event and on a weekly basis.

Sediment at sediment sock must be removed when accumulations reach ½ the above ground height of the sock.

Sediment removed from sediment sock shall be placed in a designated topsoil stockpile area.

SEEDING AND MULCHING

Seeding shall be applied to all disturbed areas as soon as practical following completion of fine grading. Disturbed areas that will not be topsoiled and fine graded within 4 days of being excavated shall be temporarily seeded and mulched.

Temporary seed mixture shall be as follows:

Formula and Species	% By Mass	Minimum % Purity	Minimum % Germination	Weed Seed	Seeding Rate lb/1000 s.y.
Formula B----------					20.0 Total
Annual Ryegrass (Lolium multiflorum)	20	98	90	0.15	20.0

Permanent seed mixture shall be as follows:

Formula and Species	% By Mass	Minimum % Purity	Minimum % Germination	Weed Seed	Seeding Rate lb/1000 s.y.
Formula B----------					20.0 Total
Perennial Ryegrass mixture (Lolium perenne). A combination of improved certified varieties with no one variety exceeding 50% of the total Ryegrass component.	20	98	90	0.15	8.0
Creeping Red Fescue or Chewings Fescue	30	98	85	0.15	12.0
Kentucky Bluegrass mixture (Poa-pratensis). A combination of improved certified varieties with no one variety exceeding 25% of the total Bluegrass component.	50	98	80	0.20	22.0

Soil Amendments including lime and fertilizer shall be applied in accordance with PennDOT publication 408, Section 804 applied as follows:

Prepare areas for permanent seeding by uniformly applying supplements. Blend the initial soil supplements into the soil at least 2 inches, on topsoiled areas, by raking, disking, harrowing, or other acceptable methods. Blend the supplements into the soil during tillage operations. Apply slow-release nitrogen fertilizer to the surface of Formula B, D, L, and W seeded areas before project completion. Do not apply slow-release nitrogen fertilizer supplement to Formula C seeded areas. Apply soil supplements as follows, unless otherwise indicated:

- Pulverized Agricultural Limestone —800 lb/1000 yd2
- 10-20-20 Analysis Commercial Fertilizer —140 lb/1000 yd2
- 38-0-0 Ureaform Fertilizer —50 lb/1000 yd2
  or
- 32-0-0 to 38-0-0 Sulfur Coated Urea Fertilizer —59 lb/1000 yd2 to 50 lb/1000 yd2 as directed, or
- 31-0-0 IBDU Fertiliizer —61 lb/1000 yd2

Mulching shall consist of straw and is to be applied in accordance with PennDOT publication 408, Section 805, applied at a rate of 1200 lbs/1000yd2.

FILL MATERIAL:

The contractor shall balance all cuts and fill with the amount of rock and soil that is available on site.

In the case that fill material is required for the site, the contractor is responsible to perform environmental due dilligence and determine that all fill imported to the site meets DEP's definition of clean fill.

Clean fill is defined as uncontaminated, nonwater-loluble, nondecomposable inert solid material. The term includes soil, rock, stone, dredged material, used asphalt, and brick, block or concrete from construction and deomolition activities that is separate from other waste and recognizable as such. (25 Pa. Code 271.101 and 287.101) The term does not include materials placed in or on the waters of the Commonwealth unless otherwise authorized.

Environmental due diligence is defined as investigative techniques, inluding, but not limited to, visual property inspections, electronic data base searches, review of ownership and use of history of property, Sanborn maps, environmental questionnaires, transaction screens, analytical testing, environmental assessments or audits.

STAHL SHEAFFER ENGINEERING
301 SCIENCE PARK ROAD, SUITE 333
STATE COLLEGE, PA 16803
PH: 814-689-1562
FAX: 814-689-1885
WWW.SSE-LLC.COM

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHAD E. SHAFFER
LAND SURVEYOR
SU060672

SEAL:

SURVEYOR CES
CADD GWD
DESIGNER CES
PROJ. MANAGER CES
FILE 15-144

DATE	DESCRIPTION

REVISIONS

PROJECT NAME

LIBERTY HOLLOW TRAIL

NORTHUMBERLAND BOROUGH

SHEET NAME

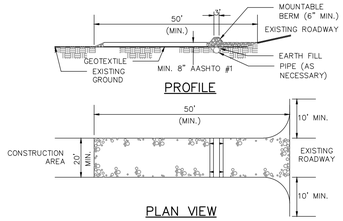
EROSION AND SEDIMENTATION CONTROL NOTES

PROJECT NO.
SSE 15-144

DATE
APRIL 08, 2016

SCALE	SHEET NO.
AS NOTED	ES2

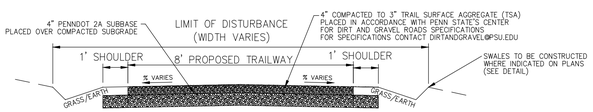
PLOTTED: 14 Apr 2016, 2:31 PM



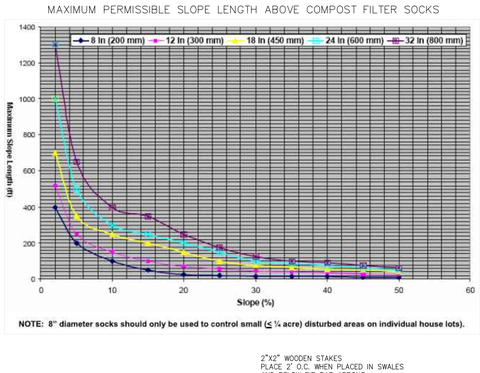
1. REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE
2. RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
3. MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE 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

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.

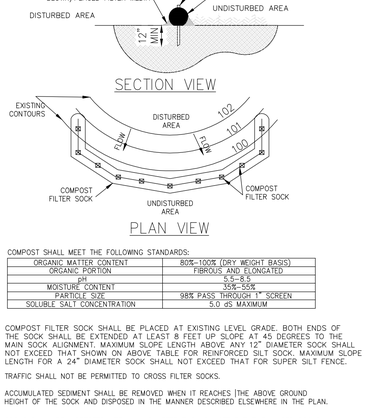
TYPICAL ROCK CONSTRUCTION ENTRANCE
NOT TO SCALE



TYPICAL TRAIL CROSS SECTION
NOT TO SCALE



NOTE: 8" diameter socks should only be used to control small (≤ ¼ acre) disturbed areas on individual house lots).



COMPOST SHALL MEET THE FOLLOWING STANDARDS:

ORGANIC MATTER CONTENT	80%-100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5-8.5
MOISTURE CONTENT	35%-55%
PARTICLE SIZE	98% PASS THROUGH 1" SCREEN
SOLUBLE SALT CONCENTRATION	5.0 dS MAXIMUM

COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY 12" DIAMETER SOCK SHALL NOT EXCEED THAT SHOWN ON ABOVE TABLE FOR REINFORCED SILT SOCK. MAXIMUM SLOPE LENGTH FOR A 24" DIAMETER SOCK SHALL NOT EXCEED THAT FOR SUPER SILT FENCE.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.

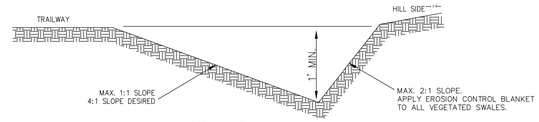
ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES THE ABOVE GROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

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.

BIODEGRADABLE FILTER SOCK SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

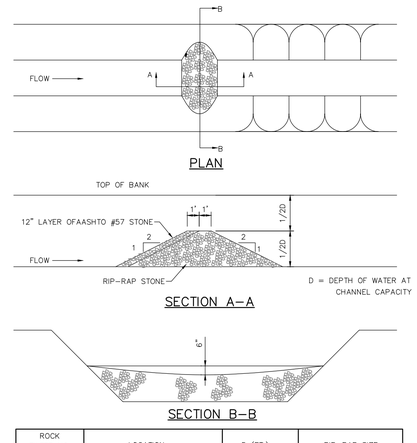
UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

TYPICAL COMPOST FILTER SOCK
NOT TO SCALE



MAINTENANCE NOTE: PERFORM DITCH CLEANING AS REQUIRED TO INSURE 1' MIN. DEPTH. RESEED ALL DISTURBED AREAS AND FOLLOW SEEDING NOTES.

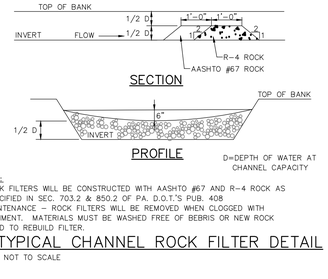
TYPICAL VEGETATED SWALE
NOT TO SCALE



ROCK FILTER NO.	LOCATION	D (FT.)	RIP-RAP SIZE
1-5	SWALE WEST, SEGMENT 5	1.0	R-3
6-11	SWALE EAST, SEGMENT 5	1.0	R-3

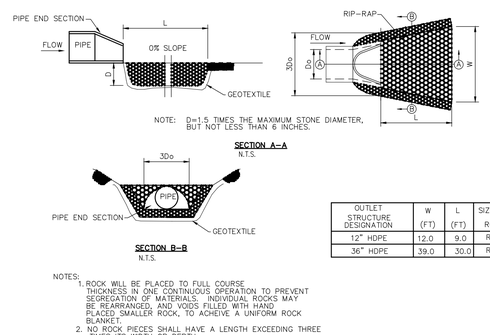
MAINTENANCE NOTES:
1. ROCK FILTERS SHOULD BE INSPECTED WEEKLY AND AFTER EACH RUN-OFF EVENT. NEEDED REPAIRS SHOULD BE INITIATED IMMEDIATELY AFTER THE INSPECTION.
2. IF FILTER STONE (AASHTO #57) BECOMES CLOGGED, IMMEDIATELY (1) REPLACE WITH NEW STONE, OR (2) REMOVE, WASH AND REPLACE STONE. FILTER CLEANING OR REPLACEMENT SHALL BE DONE ON A DAY WHEN THERE IS NO PRECIPITATION A SUPPLY OF STONE SHALL BE MAINTAINED ON SITE FOR REPLACEMENT.
3. REMOVE SEDIMENT WHEN IT ACCUMULATES A DEPTH 1/2 OF THE HEIGHT OF THE FILTER. PLACE SEDIMENT ON TOPSOIL STOCKPILE.
4. IMMEDIATELY UPON PERMANENT STABILIZATION OF EACH CHANNEL, REMOVE ACCUMULATED SEDIMENT, REMOVE ROCK FILTER AND STABILIZE DISTURBED AREAS.

ROCK FILTER IN SWALE DETAIL
NOT TO SCALE



NOTES:
* ROCK FILTERS WILL BE CONSTRUCTED WITH AASHTO #67 AND R-4 ROCK AS SPECIFIED IN SEC. 703.2 & 850.2 OF PA. D.O.T.'S PUB. 408
* MAINTENANCE – ROCK FILTERS WILL BE REMOVED WHEN CLOGGED WITH SEDIMENT. MATERIALS MUST BE WASHED FREE OF BEBRIS OR NEW ROCK USED TO REBUILD FILTER.

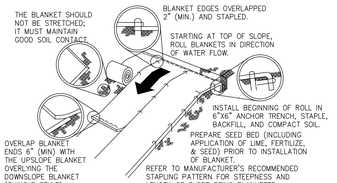
TYPICAL CHANNEL ROCK FILTER DETAIL
NOT TO SCALE



OUTLET STRUCTURE DESIGNATION	W (FT)	L (FT)	SIZE OF ROCK	MIN ROCK DEPTH (D)
12" HDPE	12.0	9.0	R-3	12"
36" HDPE	39.0	30.0	R-6	30"

NOTES:
1. ROCK WILL BE PLACED TO FULL COURSE THICKNESS IN ONE CONTINUOUS OPERATION TO PREVENT SEGREGATION OF MATERIALS. INDIVIDUAL ROCKS MAY BE REARRANGED, AND VOIDS FILLED WITH HAND PLACED SMALLER ROCK, TO ACHIEVE A UNIFORM ROCK BLANKET.
2. NO ROCK PIECES SHALL HAVE A LENGTH EXCEEDING THREE TIMES ITS WIDTH OR DEPTH.
3. ROCK SHALL BE ANGULAR, CRUSHED AND HAVE A UNIT WEIGHT OF 165 LBS./C.F.

RIP-RAP APRON DETAIL
NOT TO SCALE

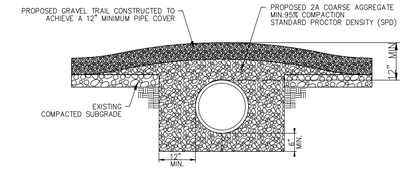


SPRAY-ON EROSION CONTROL BLANKETS (E.G. BONDED FIBER MATRIX OR FLEXIBLE GROWTH MEDIUM) MAY BE USED IN LIEU OF ROLL-ON BLANKETS IF MANUFACTURERS' RECOMMENDATIONS ARE FOLLOWED.

EROSION CONTROL BLANKET TO BE S75BN BY NORTH AMERICAN GREEN OR EQUIVALENT.

*APPLY TO ALL DISTURBED SLOPES 3:1 OR GREATER.
**APPLY TO ALL DISTURBED AREAS WITHIN 50-FEET OF SURFACE WATER OR WETLANDS.

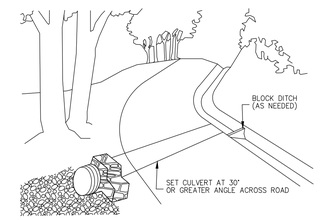
TYPICAL EROSION CONTROL BLANKET
NOT TO SCALE



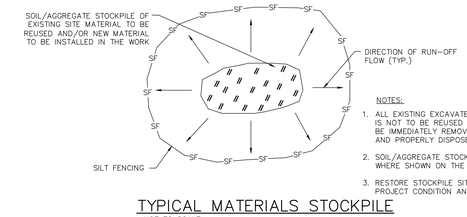
SHALLOW PIPE MODIFICATION TO BE CONSTRUCTED IN LOCATIONS WHERE CULVERT COVER IS INADEQUATE.

1. PROPOSED CULVERTS SHALL BE PLACED SUCH THAT INVERT OUT ELEVATION MATCHES EXISTING GROUND CONDITIONS.
2. FOR REPLACEMENT AND PROPOSED CULVERTS PLACE 2A COARSE AGGREGATE MATERIAL IN LIFTS 6" THICK USING VIBRATORY COMPACTION EQUIPMENT. DO NOT COMPACT MATERIAL ABOVE PIPE UNTILL 12" OF FILL IS IN PLACE.

TYPICAL PIPE CROSSING AND SHALLOW PIPE MODIFICATION DETAIL
NOT TO SCALE

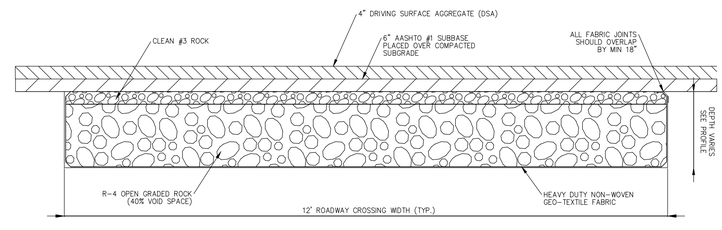


TYPICAL CROSS DRAIN CULVERT
NOT TO SCALE



NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.
3. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.

TYPICAL MATERIALS STOCKPILE
NOT TO SCALE



1. LENGTH SHOULD BE SUCH THAT THE STRUCTURE DAYLIGHTS INTO DITCH ON EACH SIDE OF CROSSING.
2. USE BEDDING MATERIAL IF NECESSARY TO PROTECT FABRIC.
3. PLACE LAYER OF SMALLER STONE (#3) ON TOP OF R-4 WITHOUT INTERMIXING.
4. WRAP ENDS OF LOWER FABRIC UP ON TOP OF STRUCTURE.
5. THERE MUST BE A MINIMUM OF 6 INCHES OF COMPACTED MATERIAL ABOVE THE GEOTEXTILE FABRIC ENCASING THE FRENCH MATTRESS.

TYPICAL FRENCH MATTRESS DETAIL
NOT TO SCALE

STAHL SHEAFFER ENGINEERING
301 SCIENCE PARK ROAD, SUITE 333
STATE COLLEGE, PA 16803
PH: 814-689-1562
FAX: 814-689-1885
WWW.SSE-LLC.COM

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHARLES E. SHAFFER
LAND SURVEYOR
SU060672

SEAL:

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FILE 15-144

DATE DESCRIPTION
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LIBERTY HOLLOW TRAIL

NORTHUMBERLAND BOROUGH

SHEET NAME

EROSION AND SEDIMENTATION CONTROL DETAILS

PROJECT NO.
SSE 15-144

DATE
APRIL 08, 2016

SCALE	SHEET NO.
AS NOTED	ES3

PLOTTED: 14 Apr 2016, 2:30 PM