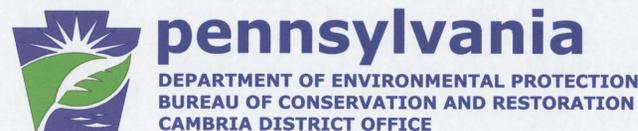


COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ACID MINE DRAINAGE ABATEMENT PROJECT
KEYSTONE PASSIVE TREATMENT SYSTEM

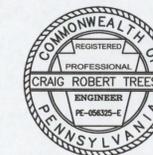
DERRY TOWNSHIP
WESTMORELAND COUNTY
CONTRACT NO. AMD 65(1183)103.1

SHEET INDEX BLOCK	
DESCRIPTION	SHEET NO.
TITLE SHEET	1
LOCATION & INDEX MAPS	2
DETAILS	3-4
PLAN	5-6
CONVEYANCE SYSTEM	7-8
SETTLING POND #1	9
LIMESTONE BED	10
SETTLING POND #2	11
AEROBIC WETLANDS	12
MANGANESE REMOVAL BED	13
E&S CONTROL DETAILS	14-15



TOM WOLF
GOVERNOR

JOHN QUIGLEY
SECRETARY
DEPARTMENT OF ENVIRONMENTAL PROTECTION



Douglas George Eckard
DOUGLAS GEORGE ECKARD, P.E.
PROJECT DESIGNER – CAMBRIA OFFICE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3/14/16
DATE

Craig Robert Treese
CRAIG ROBERT TREESE, P.E.
BITUMINOUS AMD DESIGN & OPERATION SUPPORT
SECTION CHIEF – CAMBRIA OFFICE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3/15/16
DATE

Jeffrey Means
JEFFREY MEANS
ENVIRONMENTAL PROGRAM MANAGER –
CAMBRIA OFFICE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3/15/16
DATE



STOP! CALL BEFORE YOU DIG.
BEFORE YOU DIG ANYWHERE IN
PENNSYLVANIA CALL 1-800-242-1776
SERIAL NO. 20151603259

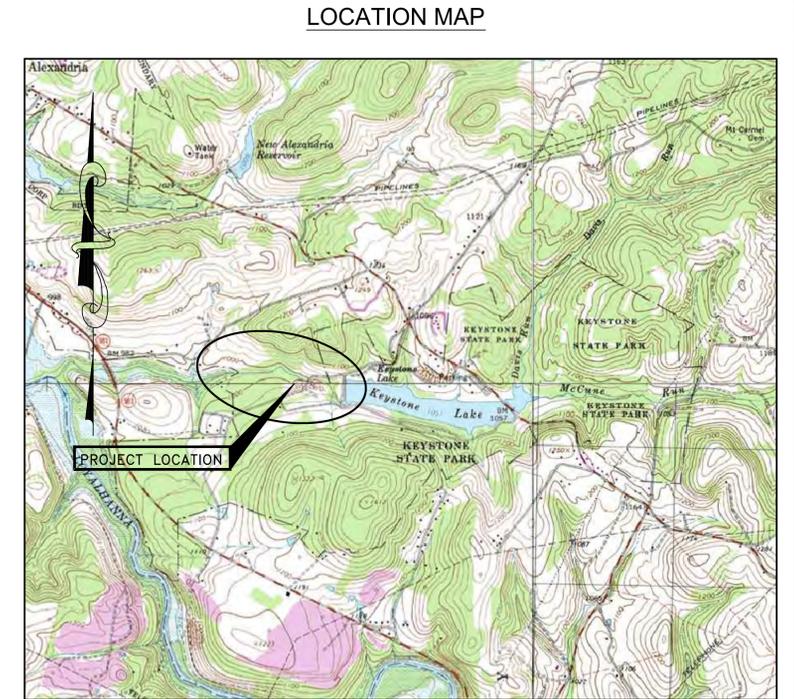
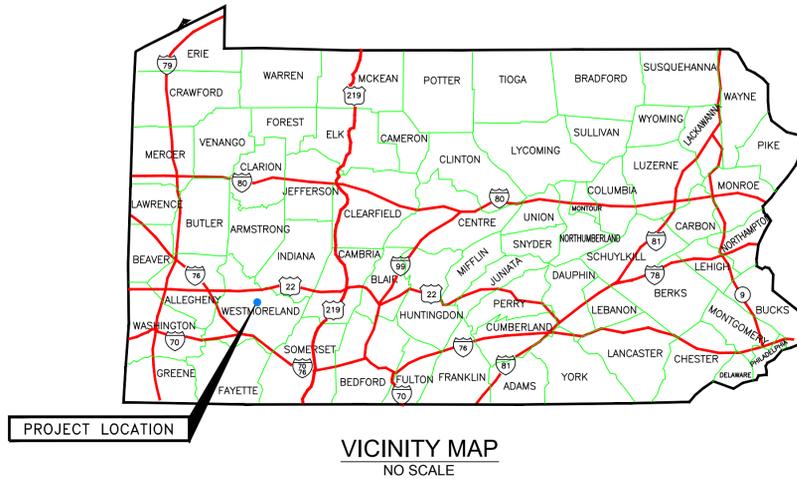
UNDER PUBLIC UTILITIES ACT NO. 187

THE CONTRACTOR SHALL COMPLY WITH THE ACT OF DECEMBER 10, 1974 (PUBLIC LAW 852, NO.287), AS AMENDED, WHICH DEFINES THE PROCEDURES FOR NOTIFICATION TO PUBLIC UTILITIES PRIOR TO EXCAVATION, DRILLING OR DEMOLITION WORK USING POWER EQUIPMENT OR EXPLOSIVES.

SS COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF CONSERVATION
AND NATURAL RESOURCES
1150 KEYSTONE PARK ROAD
DERRY, PA 15627-3679
JEFF GAUL, MAINTENANCE SUPERVISOR
PARK OFFICE NO. 724-668-2939
MAINTENANCE OFFICE NO. 724-668-7932

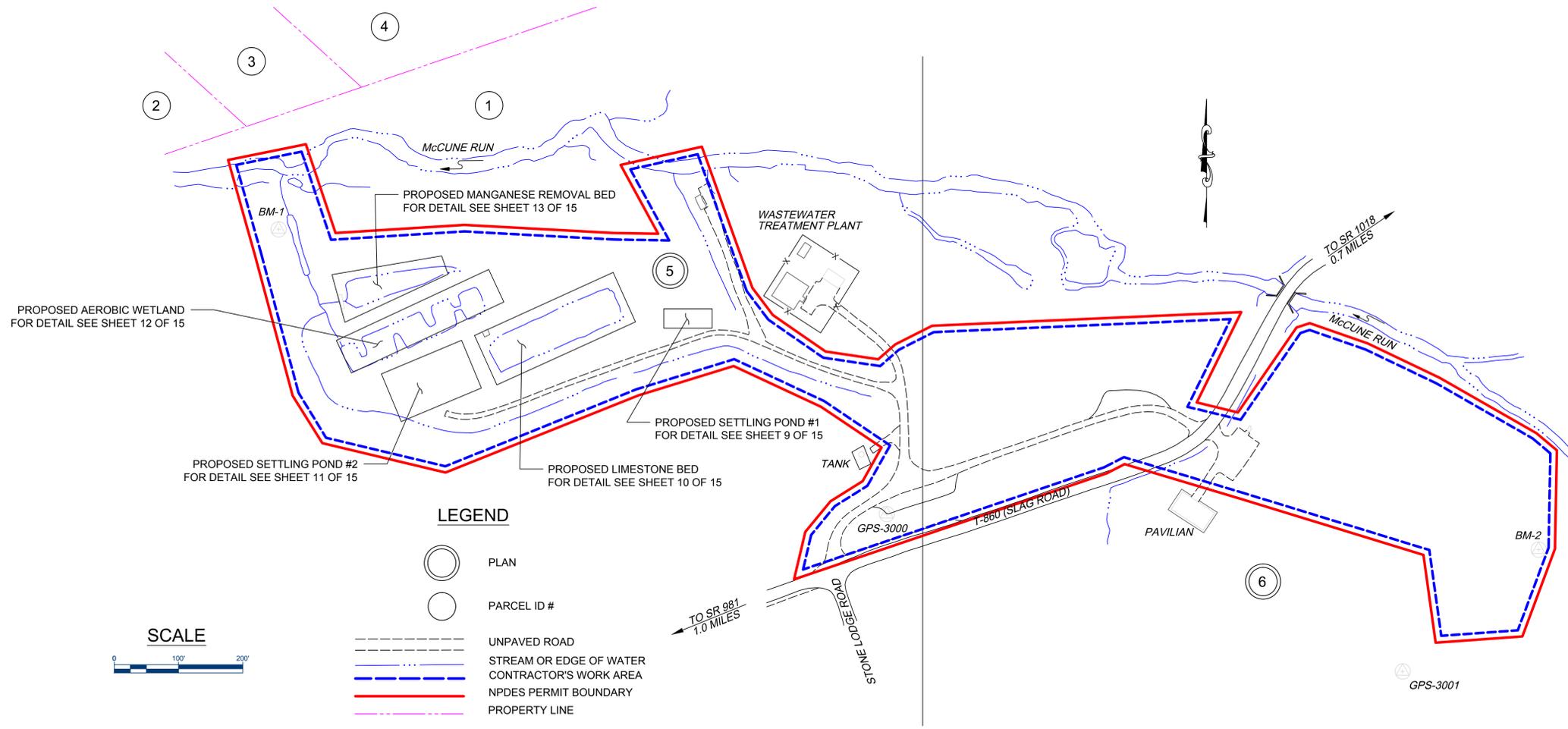
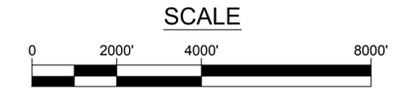
PROPERTY OWNERS

- 1 COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF CONSERVATION
AND NATURAL RESOURCES
1150 KEYSTONE PARK ROAD
DERRY, PA 15627-3679
KRISTIAN BAKER, PARK MANAGER
TELEPHONE NO. 724-668-2939
PARCEL ID # 45-22-00-0-001
- 2 BRIAN ORGOVAN
202 FLOWERS ROAD
NEW ALEXANDRIA, PA 15670
PARCEL ID # 45-21-00-0-079
- 3 JAMES & YVONNE LOVEJOY
210 FLOWERS ROAD
NEW ALEXANDRIA, PA 15670
PARCEL ID # 45-21-00-0-078
- 4 JOHN ORGOVAN
261 FLOWERS ROAD
NEW ALEXANDRIA, PA 15670
PARCEL ID # 45-21-00-0-119



BENCH MARK DATA

BM NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
GPS-3000	383516.7281	1509881.993	1029.867	5/8" REBAR WITH CAP
GPS-3001	383273.3791	1510684.267	1055.200	5/8" REBAR WITH CAP
DEP BM-2	383461.7789	1510895.523	1029.281	5/8" REBAR WITH CAP
DEP BM-1	383957.3431	1508936.332	986.164	5/8" REBAR WITH CAP



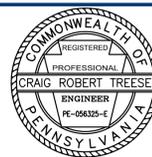
GENERAL NOTES

1. PROPERTY OWNERSHIP IS BASED ON THE WESTMORELAND COUNTY TAX MAP PARCEL NO. 45-22-00-01-001, DEED BOOK VOLUME 2034 PAGE 992.
2. DATA CONCERNING UNDERGROUND UTILITIES HAS BEEN OBTAINED FROM AVAILABLE INFORMATION, ACCURACY OF THE DATA IS NOT GUARANTEED. SEE UTILITY LISTING ON THIS DRAWING AND CALL THE "PA. ONE CALL SYSTEM" AT 1-800-242-1776 PRIOR TO MOBILIZATION.
3. ALL AREAS OUTSIDE THE CONTRACTOR'S WORK AREA THAT ARE DISTURBED BY THE CONTRACTOR, MUST BE RESTORED TO AS GOOD AS OR BETTER THAN EXISTING CONDITIONS.
4. AREAS WITHIN THE LIMIT OF GRADING WHERE 2 FT. CONTOUR INTERVALS ARE NOT COMPLETELY SHOWN SHALL BE GRADED UNIFORMLY BETWEEN 10 FT. CONTOUR INTERVALS.
5. CONTRACTOR'S WORK AREA AND LIMIT OF GRADING AREA ARE APPROXIMATE. MINOR DEVIATIONS MAY BE PERMITTED SUBJECT TO THE APPROVAL OF THE DEPARTMENT'S REPRESENTATIVE.
6. MINOR ADJUSTMENTS IN GRADE MAY BE MADE BY THE DEPARTMENT REPRESENTATIVE, TO SUIT FIELD CONDITIONS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE, AS A RESULT OF THE WORK, TO ANY: EXISTING IMPROVEMENTS, ACCESS ROADS, PROPERTY CORNERS, UTILITIES AND STRUCTURES (WHETHER THEY ARE SHOWN ON THE DRAWINGS OR NOT.)
8. HORIZONTAL CONTROL IS BASED UPON NAD 83, PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (SOUTH ZONE).
9. VERTICAL CONTROL INFORMATION IS BASED ON NAVD 88.

INDEX MAP



NO.	BY	DATE	DESCRIPTION
REVISIONS			



SUBMITTED BY:
DOUGLAS GEORGE ECKARD, P.E.
PROJECT DESIGNER

RECOMMENDED BY:
CRAIG ROBERT TREESE, P.E.
DESIGN SECTION CHIEF - CAMBRIA OFFICE

APPROVED BY:
JEFFREY MEANS
ENVIRONMENTAL PROGRAM MANAGER - CAMBRIA OFFICE

DATE: March 14, 2016
PLOT DATE: March 15, 2016
SCALE: AS SHOWN

DRAWN BY: DGE
CHECKED BY: CRT

ACAD FILE NAME:
Keystone Passive Treatment system.dwg

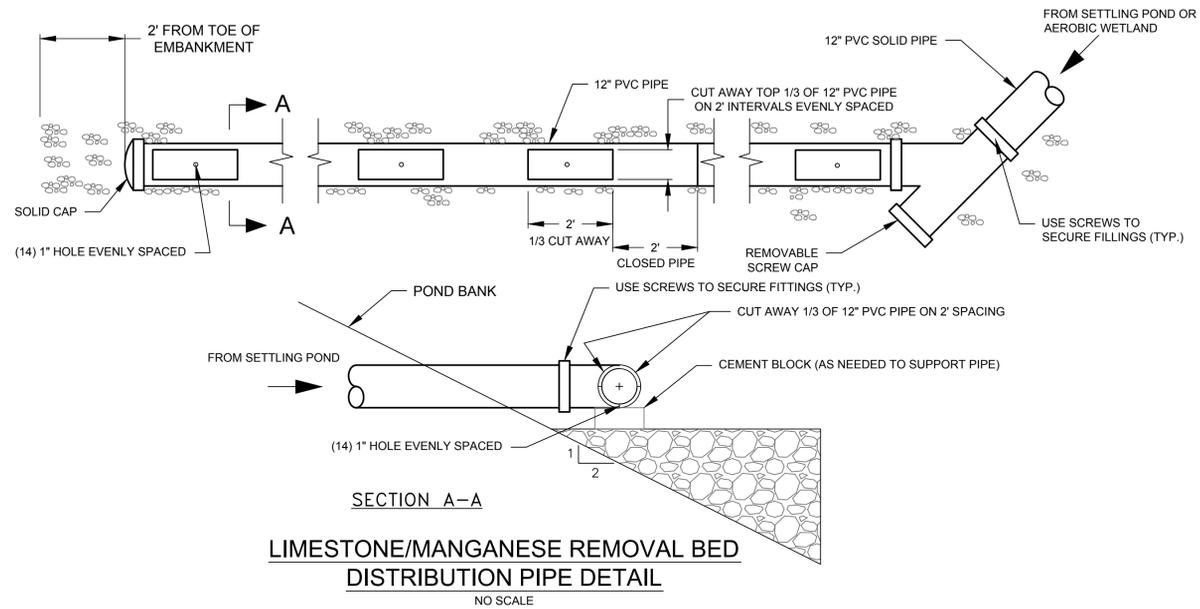
ALL EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE

**ACID MINE DRAINAGE ABATEMENT PROJECT
KEYSTONE PASSIVE TREATMENT SYSTEM**

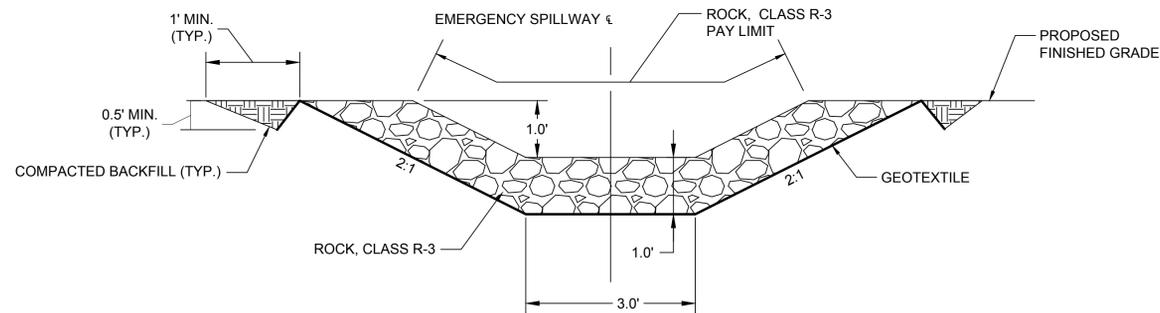
DERRY TOWNSHIP WESTMORELAND COUNTY

**CONTRACT NO. AMD 65(1183)103.1
LOCATION MAP**

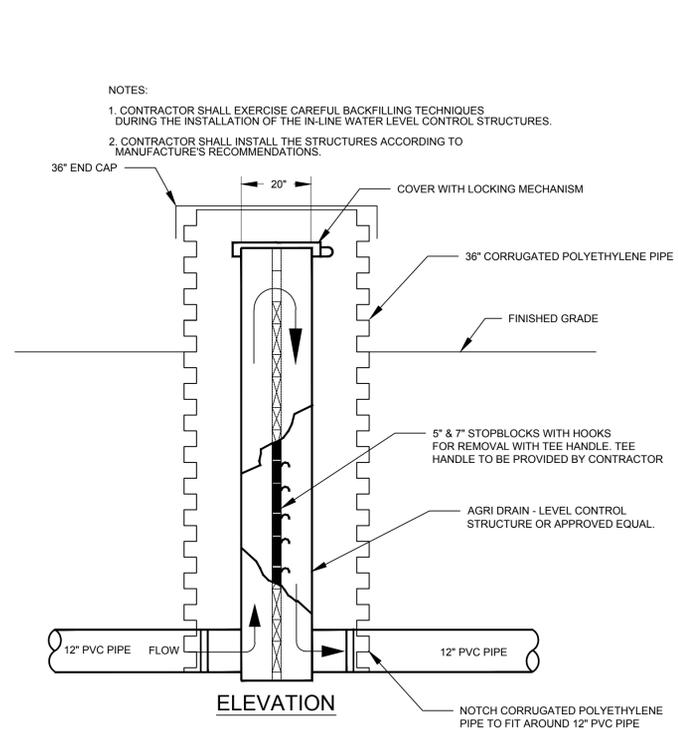
2 OF 15



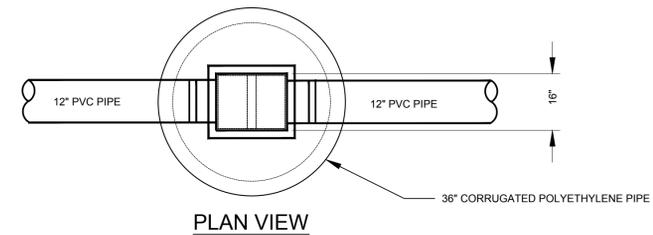
LIMESTONE/MANGANESE REMOVAL BED
DISTRIBUTION PIPE DETAIL
NO SCALE



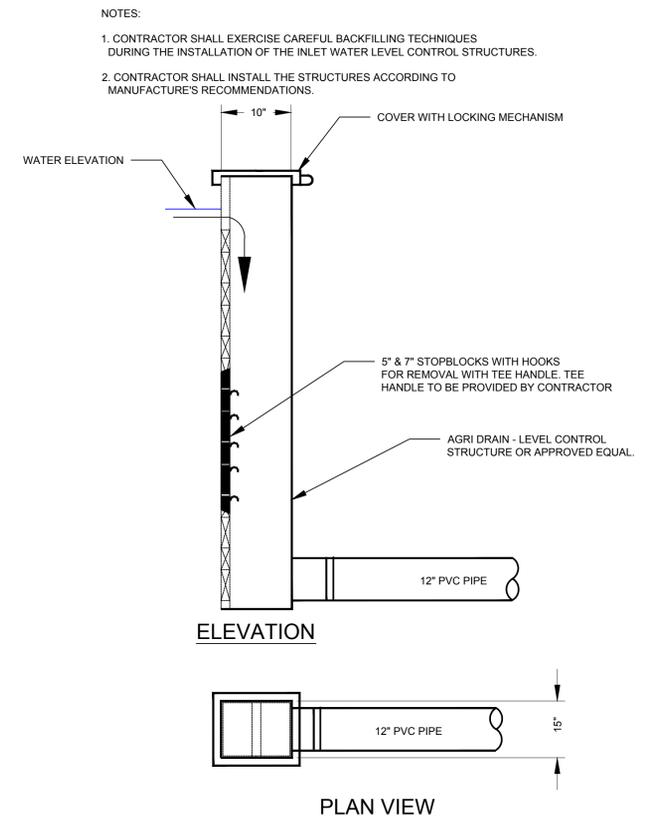
MANGANESE REMOVAL BED
EMERGENCY SPILLWAY
NO SCALE



- NOTES:
1. CONTRACTOR SHALL EXERCISE CAREFUL BACKFILLING TECHNIQUES DURING THE INSTALLATION OF THE IN-LINE WATER LEVEL CONTROL STRUCTURES.
 2. CONTRACTOR SHALL INSTALL THE STRUCTURES ACCORDING TO MANUFACTURE'S RECOMMENDATIONS.



INLINE WATER LEVEL CONTROL STRUCTURE
SCALE: NONE

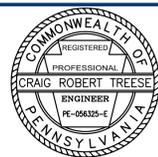


- NOTES:
1. CONTRACTOR SHALL EXERCISE CAREFUL BACKFILLING TECHNIQUES DURING THE INSTALLATION OF THE INLET WATER LEVEL CONTROL STRUCTURES.
 2. CONTRACTOR SHALL INSTALL THE STRUCTURES ACCORDING TO MANUFACTURE'S RECOMMENDATIONS.

INLET WATER LEVEL CONTROL STRUCTURE
SCALE: NONE



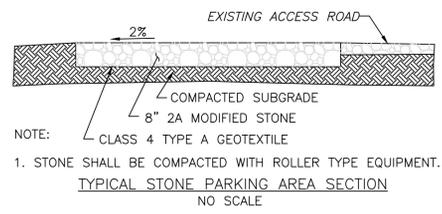
NO.	BY	DATE	DESCRIPTION
REVISIONS			



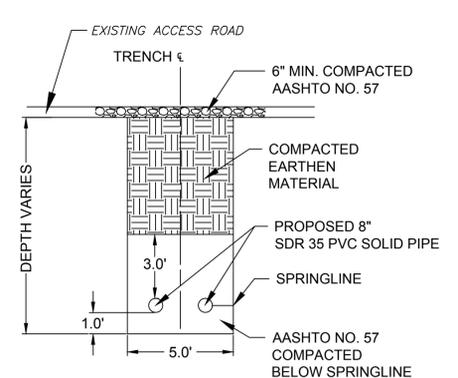
SUBMITTED BY:	DOUGLAS GEORGE ECKARD, P.E.
PROJECT DESIGNER:	
RECOMMENDED BY:	CRAIG ROBERT TREESE, P.E.
DESIGN SECTION CHIEF - CAMBRIA OFFICE:	
APPROVED BY:	JEFFREY MEANS
ENVIRONMENTAL PROGRAM MANAGER - CAMBRIA OFFICE:	

DATE:	March 15, 2016	DATE:	March 16, 2016	SCALE:	AS SHOWN
DRAWN BY:	DGE	CHECKED BY:	CRT		
ACAD FILE NAME:	Keystone Passive Treatment system.dwg				
ALL EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE					

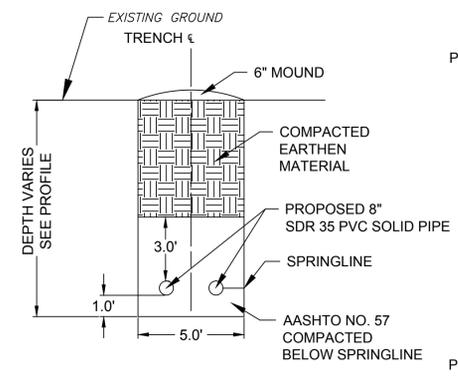
ACID MINE DRAINAGE ABATEMENT PROJECT KEYSTONE PASSIVE TREATMENT SYSTEM	
DERRY TOWNSHIP	WESTMORELAND COUNTY
CONTRACT NO. AMD 65(1183)103.1	
DETAILS	
3 OF 15	



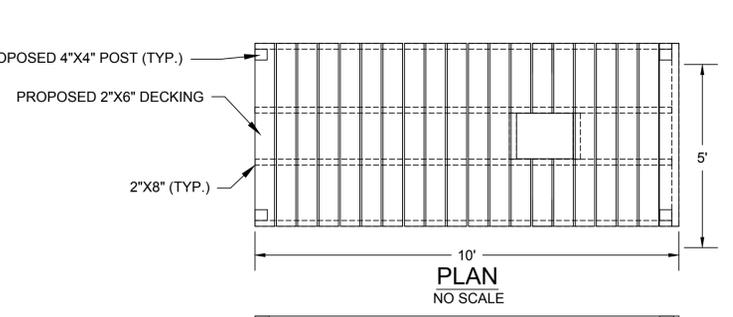
NOTE:
 CLASS 4 TYPE A GEOTEXTILE
 1. STONE SHALL BE COMPACTED WITH ROLLER TYPE EQUIPMENT.
 TYPICAL STONE PARKING AREA SECTION
 NO SCALE



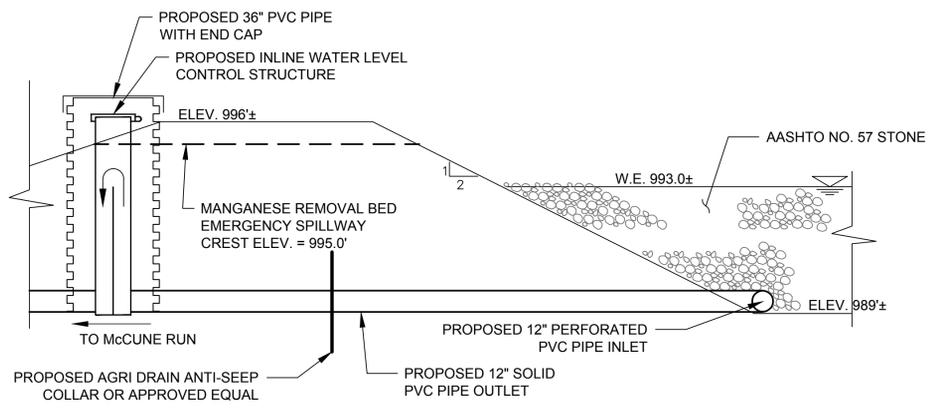
DRIVEWAY RESTORATION
NO SCALE



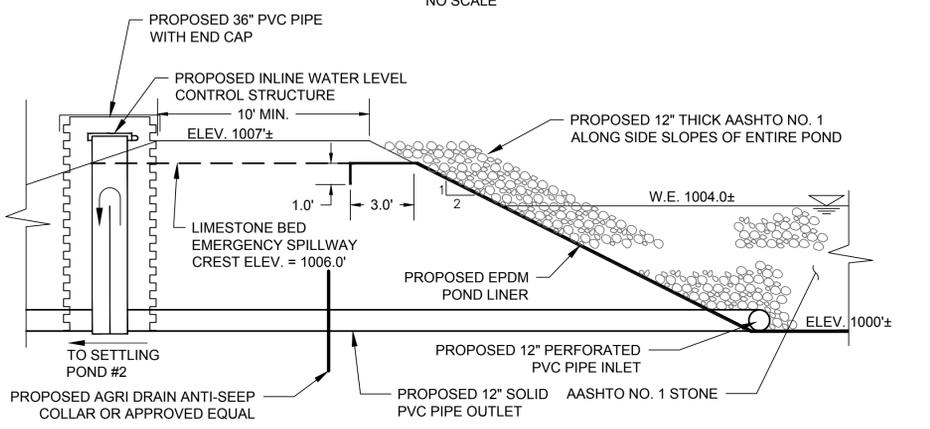
CONVEYANCE SYSTEM TRENCH
NO SCALE



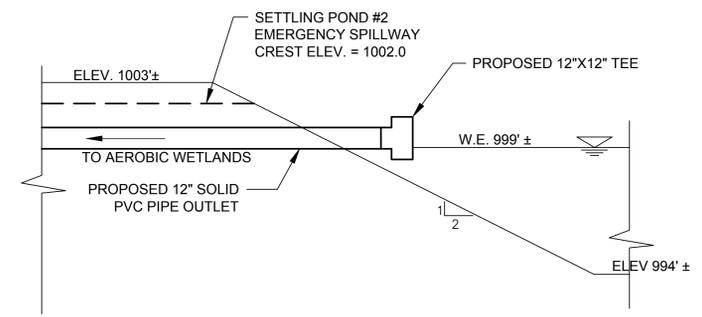
SETTLING POND #1 WATER LEVEL CONTROL ACCESS WALKWAY
NO SCALE



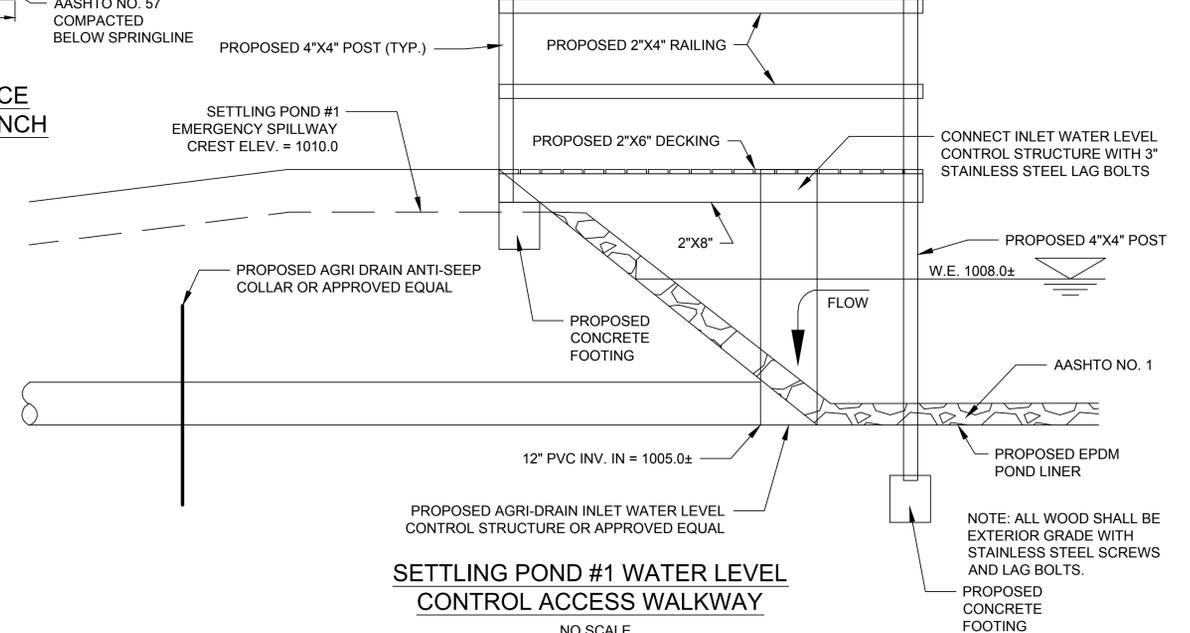
MANGANESE REMOVAL BED OUTLET
NO SCALE



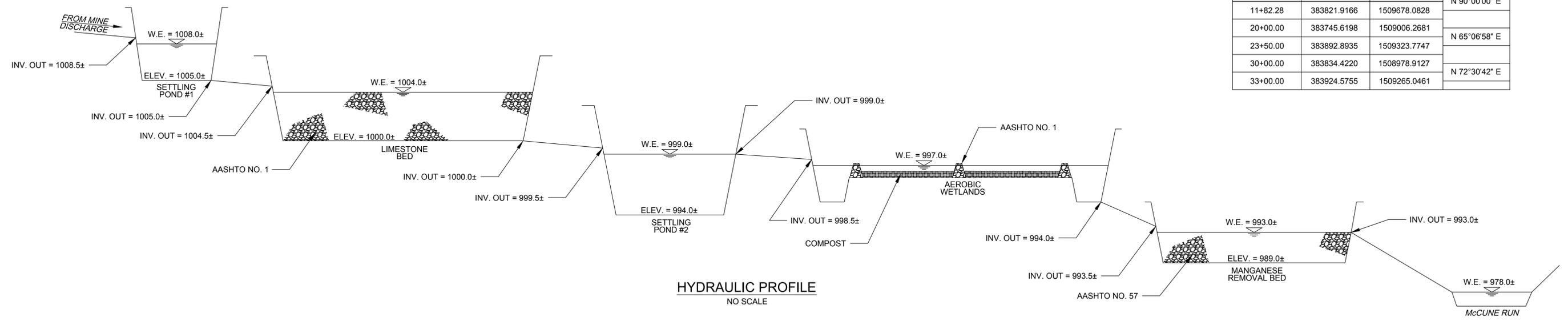
LIMESTONE BED OUTLET
NO SCALE



SETTLING POND #2 OUTLET
NO SCALE



CONSTRUCTION BASELINE DATA			
STATION	NORTHING	EASTING	BEARING
0+00.00	383627.749	1508977.613	N 65°38'17" E
5+83.31	383868.362	1509508.980	
10+00.00	383821.9166	1509495.8074	
11+82.28	383821.9166	1509678.0828	N 90°00'00" E
20+00.00	383745.6198	1509006.2681	N 65°06'58" E
23+50.00	383892.8935	1509323.7747	
30+00.00	383834.4220	1508978.9127	N 72°30'42" E
33+00.00	383924.5755	1509265.0461	



HYDRAULIC PROFILE
NO SCALE



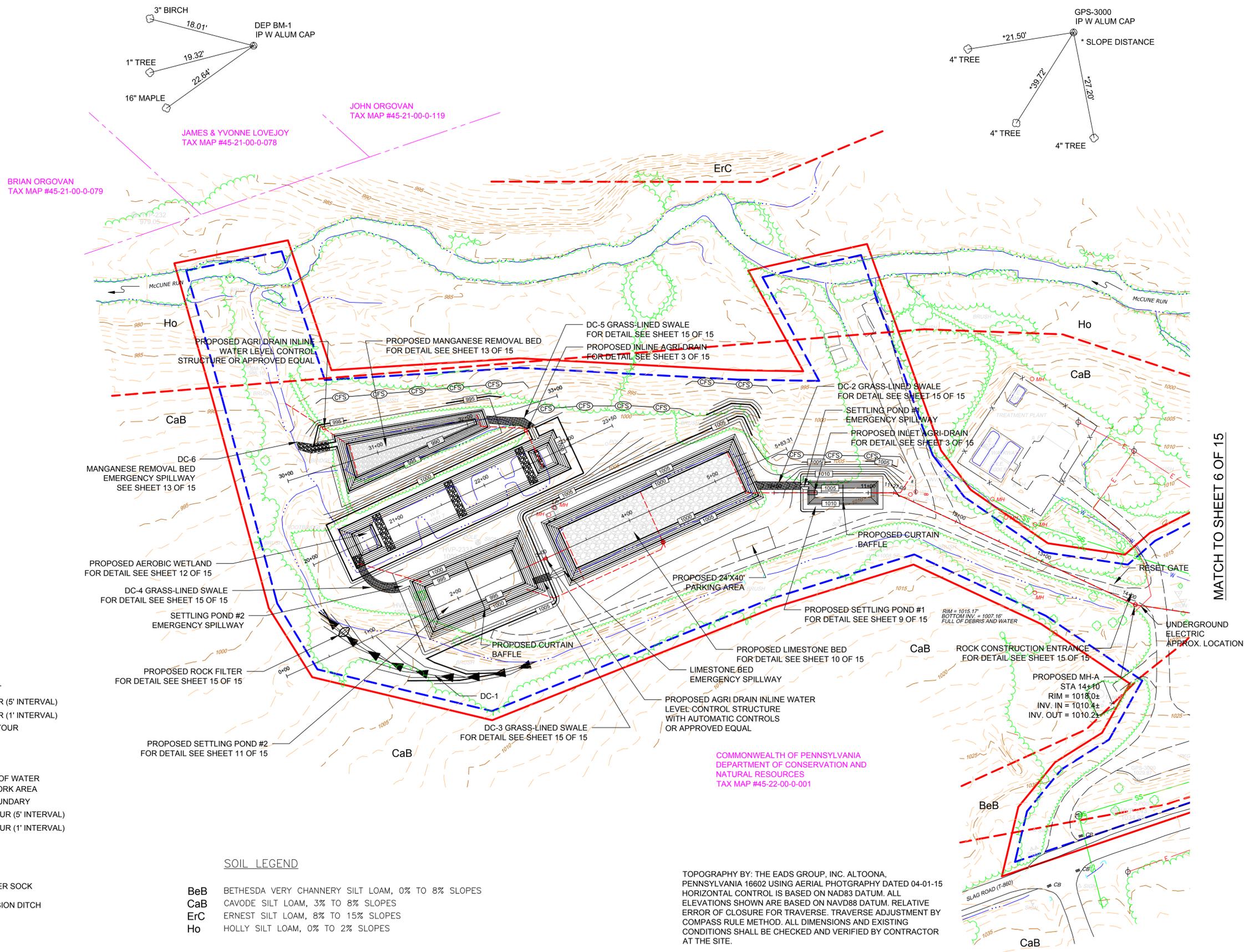
NO.	BY	DATE	DESCRIPTION
REVISIONS			



SUBMITTED BY: DOUGLAS GEORGE ECKARD, P.E.
 PROJECT DESIGNER
 RECOMMENDED BY: CRAIG ROBERT TREESE, P.E.
 DESIGN SECTION CHIEF - CAMBRIA OFFICE
 APPROVED BY: JEFFREY MEANS
 ENVIRONMENTAL PROGRAM MANAGER - CAMBRIA OFFICE

DATE: March 14, 2016
 DRAWN BY: DGE
 ACAD FILE NAME: Keystone Passive Treatment system.dwg
 PLOT DATE: March 15, 2016
 CHECKED BY: CRT
 SCALE: AS SHOWN
 ALL EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE

ACID MINE DRAINAGE ABATEMENT PROJECT
KEYSTONE PASSIVE TREATMENT SYSTEM
 DERRY TOWNSHIP
 CONTRACT NO. AMD 65(1183)103.1
 WESTMORELAND COUNTY
DETAILS
 4 OF 15



- LEGEND**
- PROPERTY LINE
 - SOIL BOUNDARY
 - SOIL MAPPING UNIT
 - EXISTING CONTOUR (5' INTERVAL)
 - EXISTING CONTOUR (1' INTERVAL)
 - DEPRESSION CONTOUR
 - EDGE OF WOODS
 - EDGE OF BRUSH
 - UNPAVED ROAD
 - STREAM OR EDGE OF WATER
 - CONTRACTOR'S WORK AREA
 - NPDES PERMIT BOUNDARY
 - PROPOSED CONTOUR (5' INTERVAL)
 - PROPOSED CONTOUR (1' INTERVAL)

- E & S LEGEND**
- 12" COMPOST FILTER SOCK
 - PROPOSED DIVERSION DITCH

- SOIL LEGEND**
- BeB** BETHESDA VERY CHANNERY SILT LOAM, 0% TO 8% SLOPES
 - CaB** CAVODE SILT LOAM, 3% TO 8% SLOPES
 - ErC** ERNEST SILT LOAM, 8% TO 15% SLOPES
 - Ho** HOLLY SILT LOAM, 0% TO 2% SLOPES

TOPOGRAPHY BY: THE EADS GROUP, INC. ALTOONA, PENNSYLVANIA 16602 USING AERIAL PHOTOGRAPHY DATED 04-01-15. HORIZONTAL CONTROL IS BASED ON NAD83 DATUM. ALL ELEVATIONS SHOWN ARE BASED ON NAVD88 DATUM. RELATIVE ERROR OF CLOSURE FOR TRAVERSE. TRAVERSE ADJUSTMENT BY COMPASS RULE METHOD. ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY CONTRACTOR AT THE SITE.

MATCH TO SHEET 6 OF 15



NO.	BY	DATE	DESCRIPTION
REVISIONS			



SUBMITTED BY:
DOUGLAS GEORGE ECKARD, P.E.
PROJECT DESIGNER

RECOMMENDED BY:
CRAIG ROBERT TREESE, P.E.
DESIGN SECTION CHIEF - CAMBRIA OFFICE

APPROVED BY:
JEFFREY MEANS
ENVIRONMENTAL PROGRAM MANAGER - CAMBRIA OFFICE

DATE: March 14, 2016
PROJECT DATE: March 15, 2016

DRAWN BY: DGE
CHECKED BY: CRT

ACAD FILE NAME: Keystone Passive Treatment system.dwg

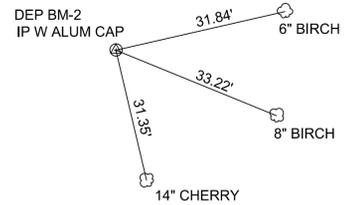
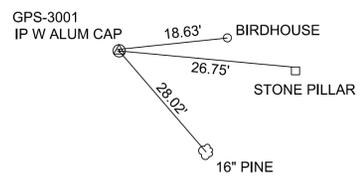
SCALE: 0 50' 100'

ALL EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE

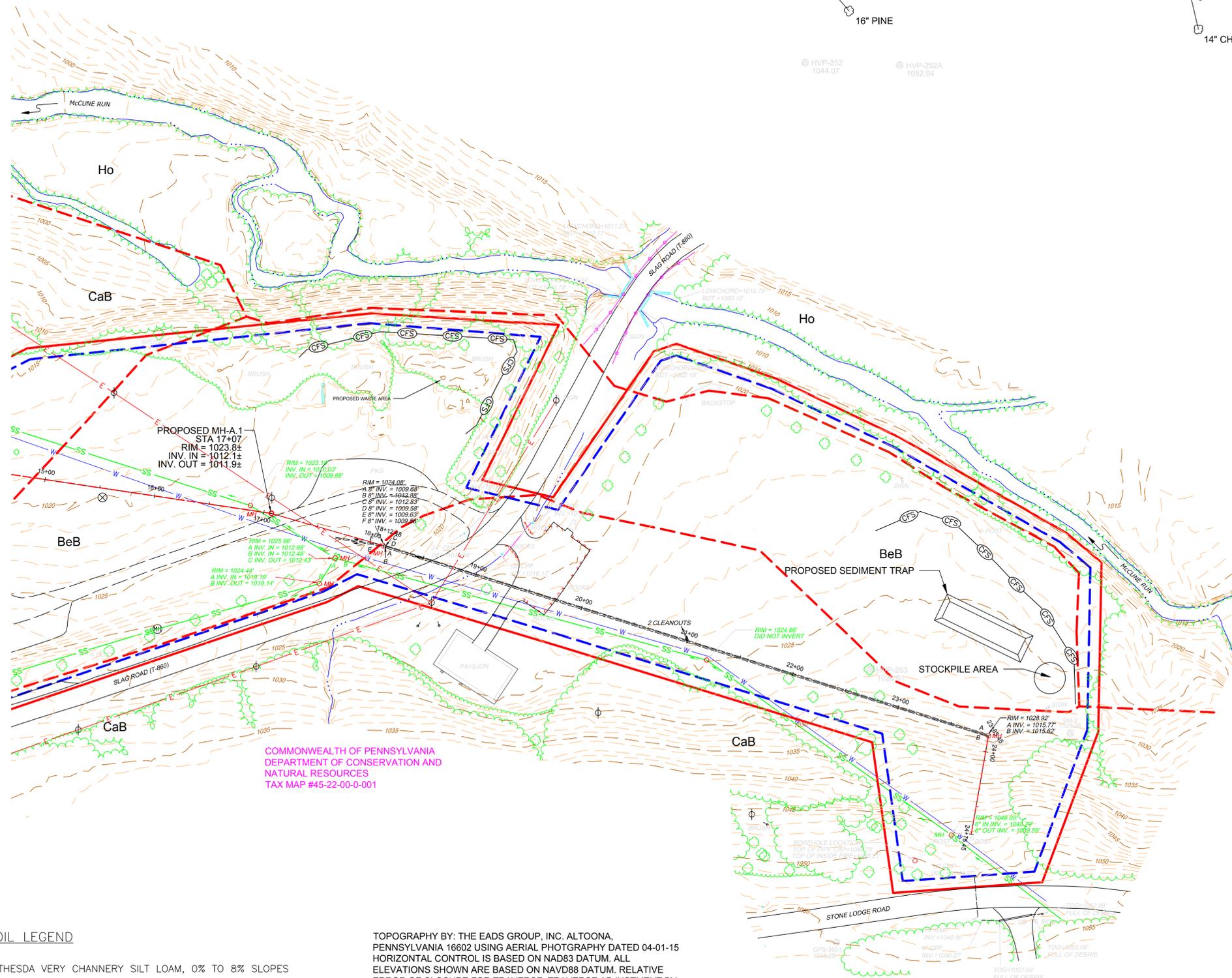
ACID MINE DRAINAGE ABATEMENT PROJECT
KEYSTONE PASSIVE TREATMENT SYSTEM

DERRY TOWNSHIP
CONTRACT NO. AMD 65(1183)103.1
PLAN

WESTMORELAND COUNTY
DRAWING NUMBER
5 OF 15



MATCH TO SHEET 5 OF 15



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF CONSERVATION AND
NATURAL RESOURCES
TAX MAP #45-22-00-0-001

NOTE:
NO WORK SHALL BE PERFORMED ON
OPENING THE EXISTING MINE ENTRY
UNTIL AFTER JULY 31, 2016.
COORDINATE OPERATIONS WITH PARK
STAFF.

- LEGEND**
- PROPERTY LINE
 - SOIL BOUNDARY
 - SOIL MAPPING UNIT
 - EXISTING CONTOUR (5' INTERVAL)
 - EXISTING CONTOUR (1' INTERVAL)
 - DEPRESSION CONTOUR
 - EDGE OF WOODS
 - EDGE OF BRUSH
 - UNPAVED ROAD
 - STREAM OR EDGE OF WATER
 - CONTRACTOR'S WORK AREA
 - NPDES PERMIT BOUNDARY
 - PROPOSED CONTOUR (5' INTERVAL)
 - PROPOSED CONTOUR (1' INTERVAL)

- E & S LEGEND**
- 12" COMPOST FILTER SOCK
 - PROPOSED DIVERSION DITCH

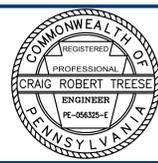
SOIL LEGEND

- BeB BETHESDA VERY CHANNERY SILT LOAM, 0% TO 8% SLOPES
- CaB CAVODE SILT LOAM, 3% TO 8% SLOPES
- ErC ERNEST SILT LOAM, 8% TO 15% SLOPES
- Ho HOLLY SILT LOAM, 0% TO 2% SLOPES

TOPOGRAPHY BY: THE EADS GROUP, INC. ALTOONA,
PENNSYLVANIA 16602 USING AERIAL PHOTOGRAPHY DATED 04-01-15
HORIZONTAL CONTROL IS BASED ON NAD83 DATUM. ALL
ELEVATIONS SHOWN ARE BASED ON NAVD88 DATUM. RELATIVE
ERROR OF CLOSURE FOR TRAVERSE. TRAVERSE ADJUSTMENT BY
COMPASS RULE METHOD. ALL DIMENSIONS AND EXISTING
CONDITIONS SHALL BE CHECKED AND VERIFIED BY CONTRACTOR
AT THE SITE.



NO.	BY	DATE	DESCRIPTION
REVISIONS			



SUBMITTED BY:
DOUGLAS GEORGE ECKARD, P.E.
PROJECT DESIGNER

RECOMMENDED BY:
CRAIG ROBERT TREESE, P.E.
DESIGN SECTION CHIEF - CAMBRIA OFFICE

APPROVED BY:
JEFFREY MEANS
ENVIRONMENTAL PROGRAM MANAGER - CAMBRIA OFFICE

DATE: March 14, 2016
DRAWN BY: DGE
ACAD FILE NAME: Keystone Passive Treatment system.dwg

PLOT DATE: March 15, 2016
CHECKED BY: CRT

SCALE: 0 50' 100'

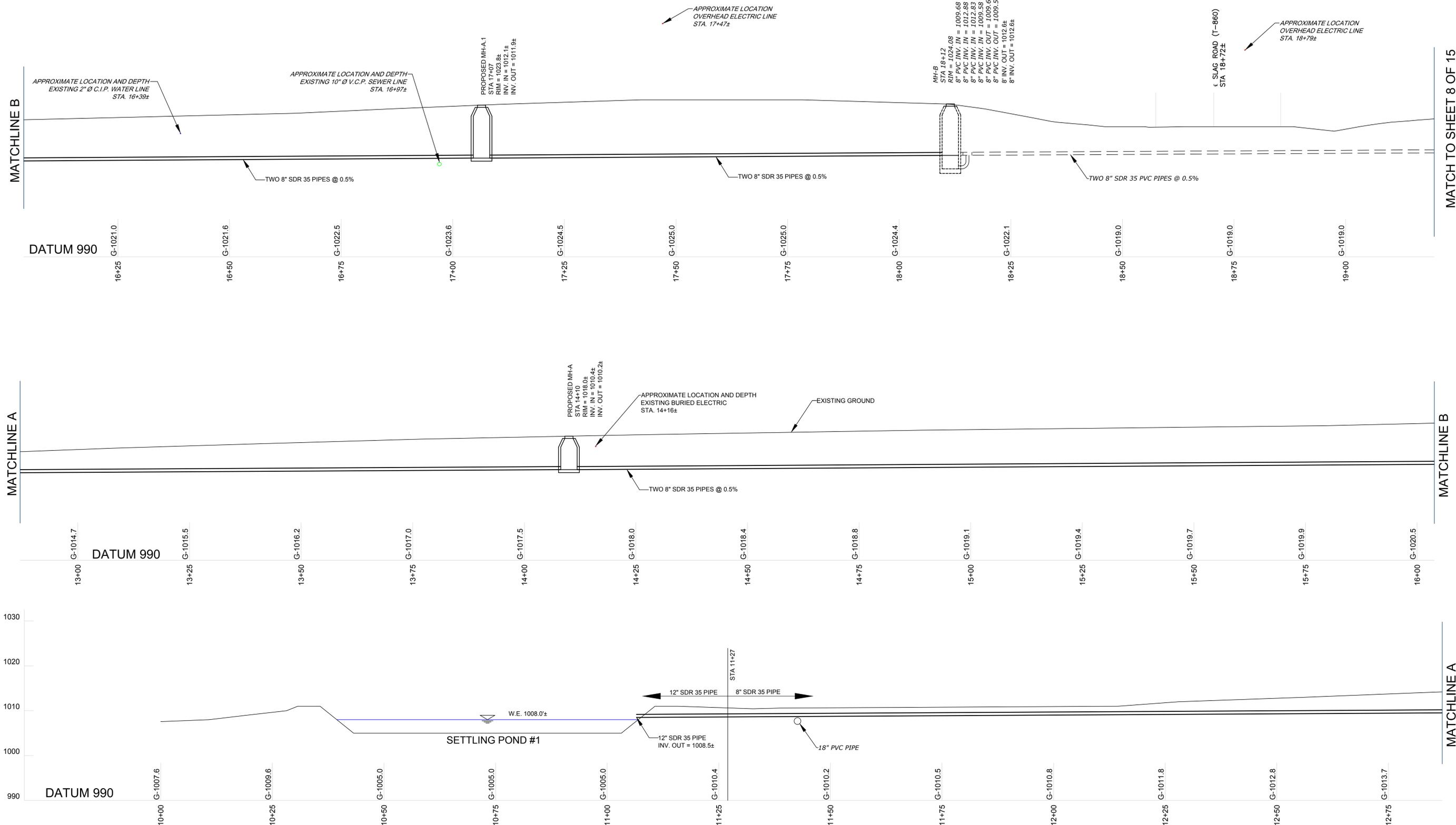
ALL EXISTING CONDITIONS SHALL BE CHECKED AND
VERIFIED BY THE CONTRACTOR AT THE SITE

ACID MINE DRAINAGE ABATEMENT PROJECT
KEYSTONE PASSIVE TREATMENT SYSTEM

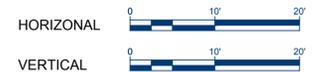
DERRY TOWNSHIP WESTMORELAND COUNTY

CONTRACT NO. AMD 65(1183)103.1
PLAN

6 OF 15



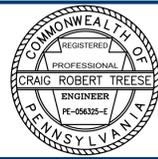
SCALE



PROFILE

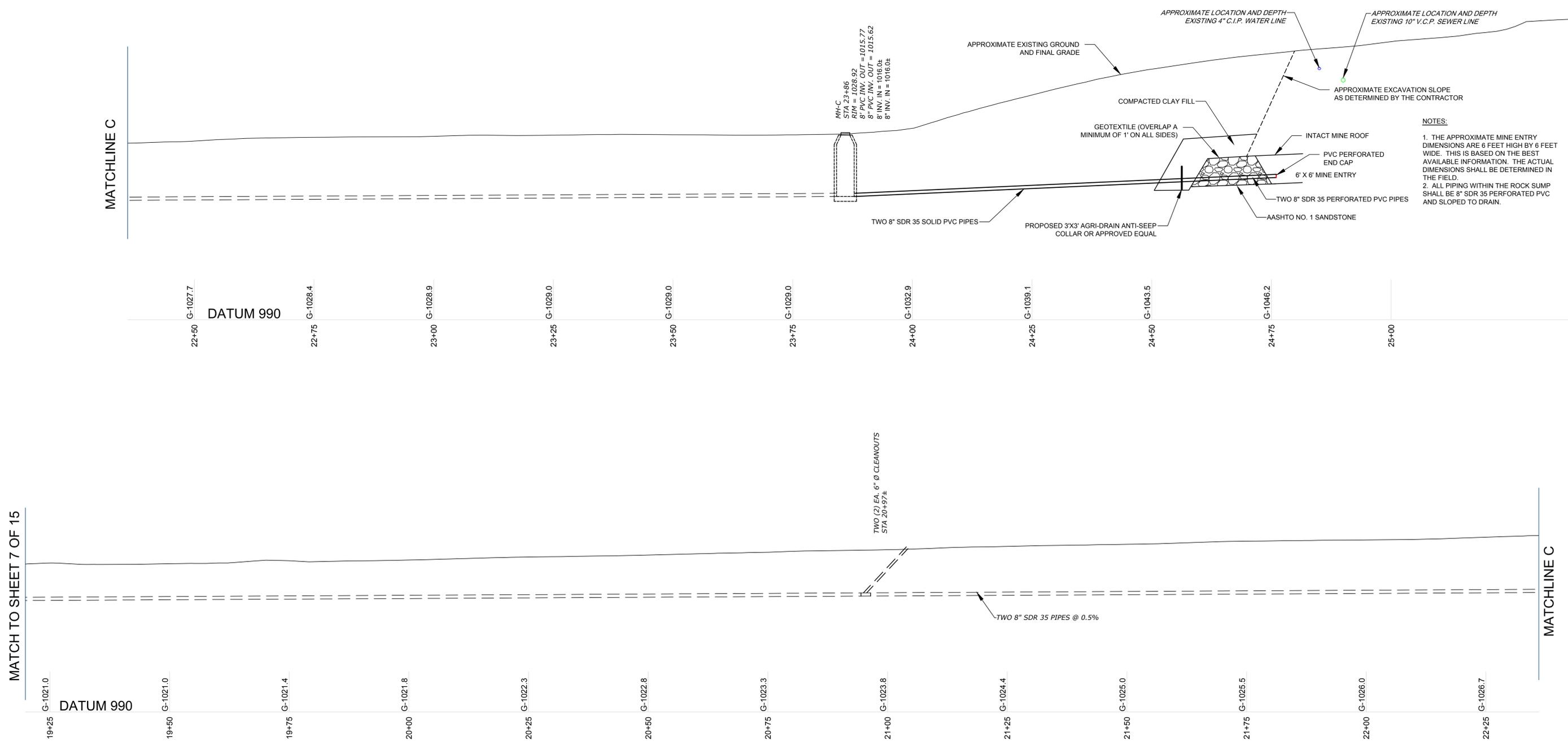


NO.	BY	DATE	DESCRIPTION
REVISIONS			



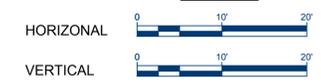
SUBMITTED BY: DOUGLAS GEORGE ECKARD, P.E. PROJECT DESIGNER	DATE: March 14, 2016	PLLOT DATE: March 15, 2016	SCALE: AS SHOWN
RECOMMENDED BY: CRAIG ROBERT TREESE, P.E. DESIGN SECTION CHIEF - CAMBRIA OFFICE	DRAWN BY: DGE	CHECKED BY: CRT	
APPROVED BY: JEFFREY MEANS ENVIRONMENTAL PROGRAM MANAGER - CAMBRIA OFFICE	ACAD FILE NAME: Keystone Passive Treatment system.dwg		
ALL EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE			

ACID MINE DRAINAGE ABATEMENT PROJECT KEYSTONE PASSIVE TREATMENT SYSTEM	
DERRY TOWNSHIP	WESTMORELAND COUNTY
CONTRACT NO. AMD 65(1183)103.1 CONVEYANCE SYSTEM PROFILE	
7 OF 15	

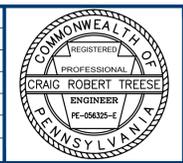


- NOTES:**
1. THE APPROXIMATE MINE ENTRY DIMENSIONS ARE 6 FEET HIGH BY 6 FEET WIDE. THIS IS BASED ON THE BEST AVAILABLE INFORMATION. THE ACTUAL DIMENSIONS SHALL BE DETERMINED IN THE FIELD.
 2. ALL PIPING WITHIN THE ROCK SUMP SHALL BE 8" SDR 35 PERFORATED PVC AND SLOPED TO DRAIN.

SCALE PROFILE

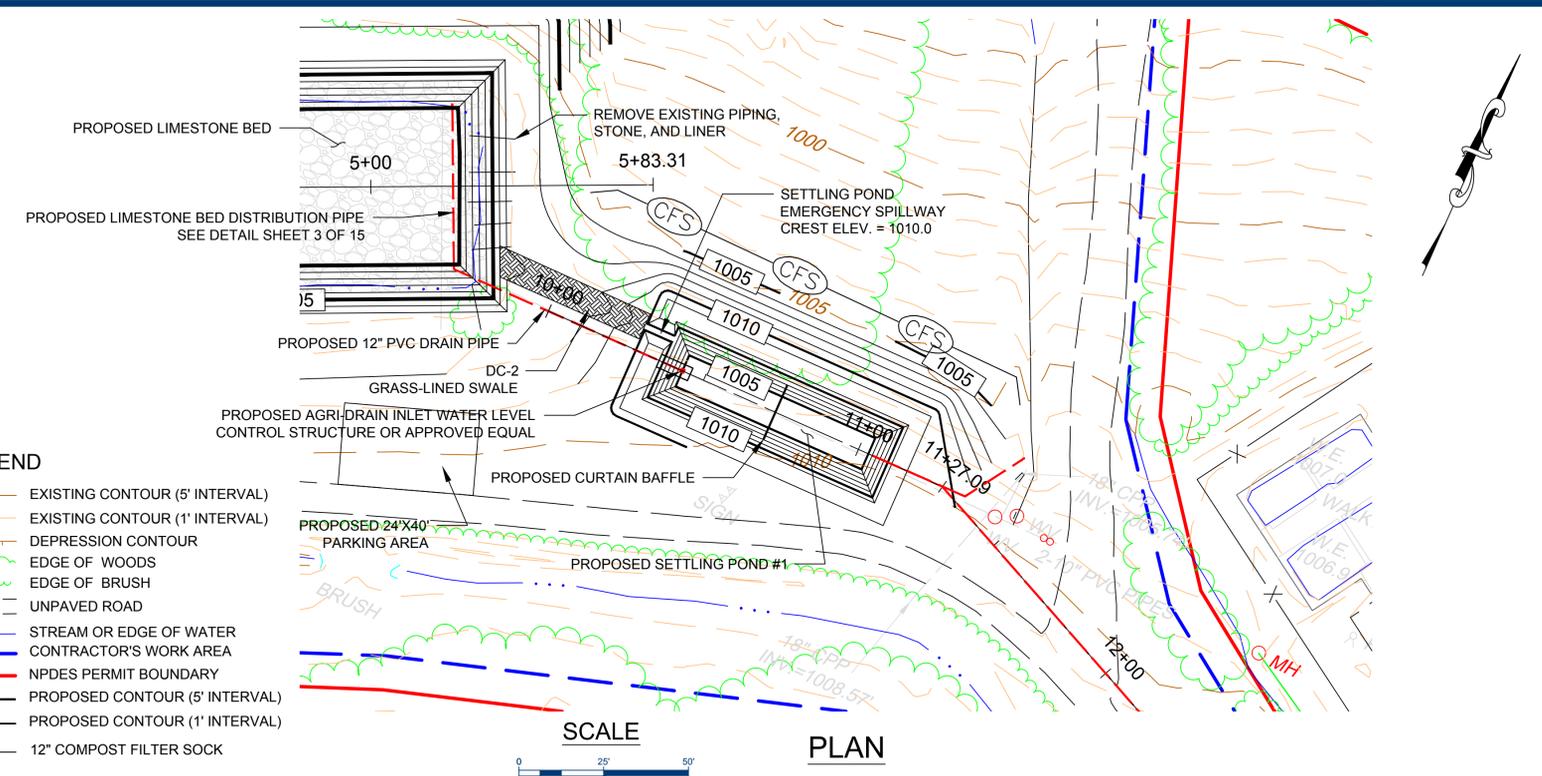
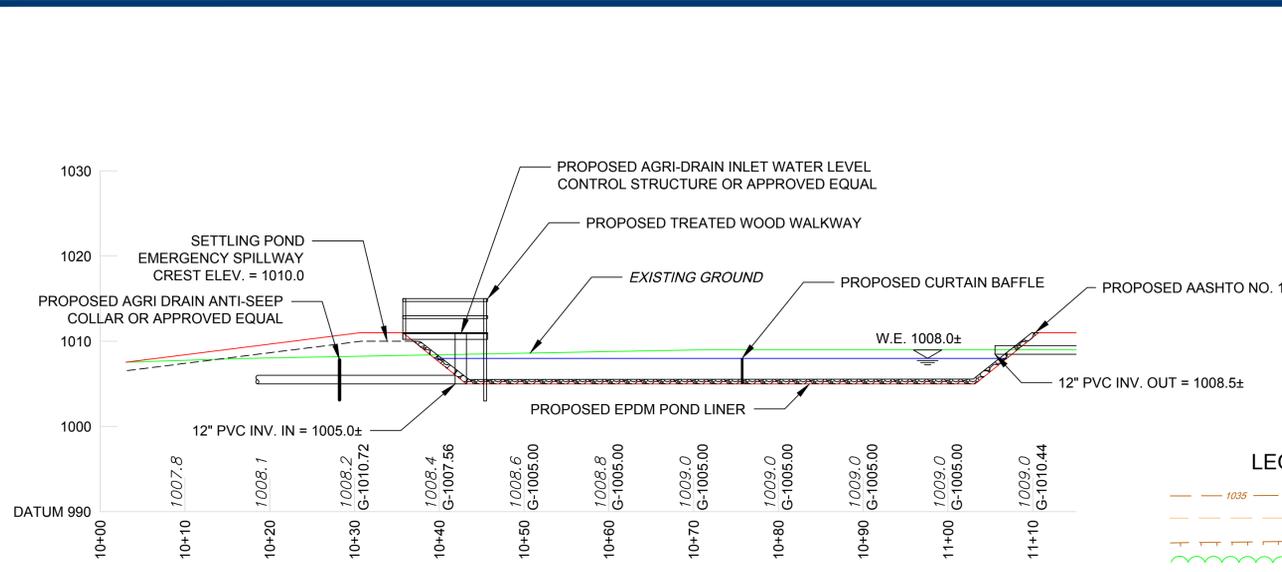


NO.	BY	DATE	DESCRIPTION
REVISIONS			

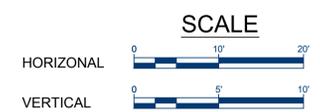
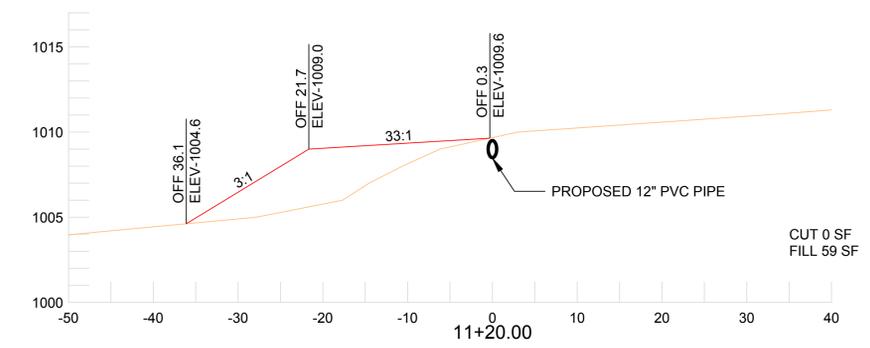
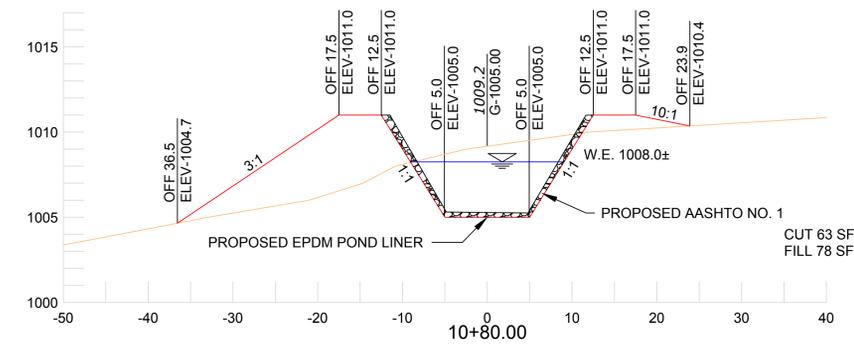
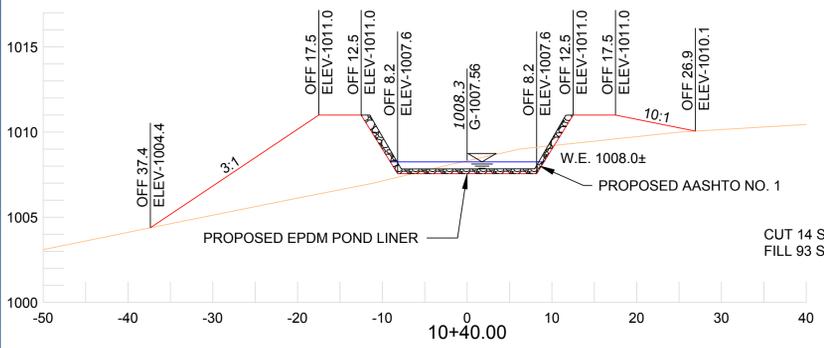
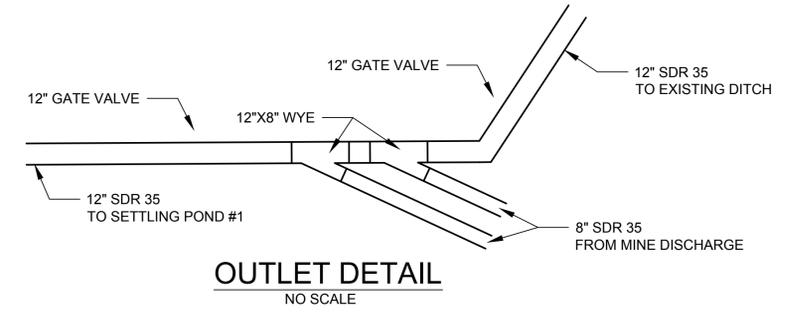
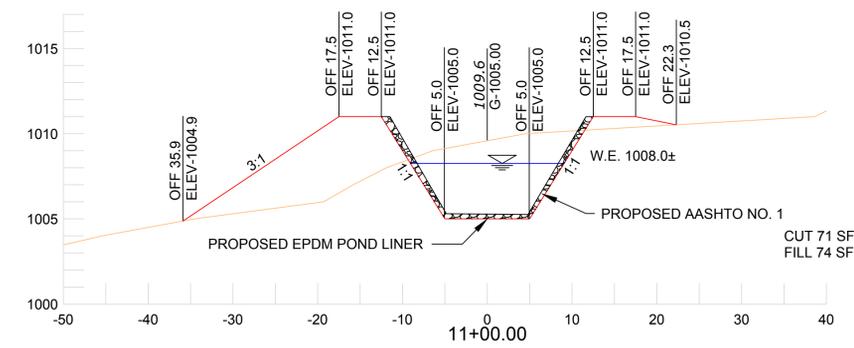
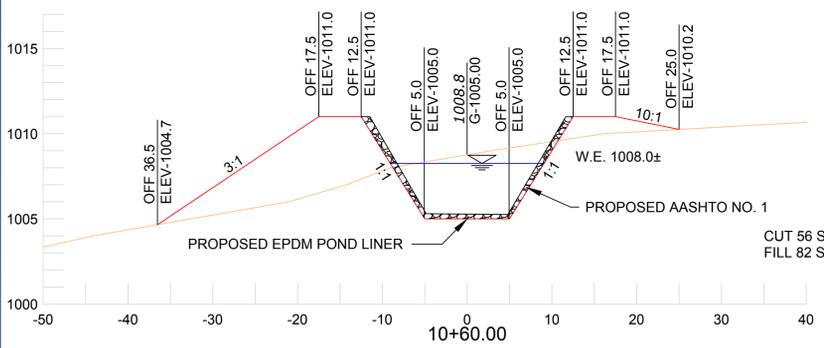
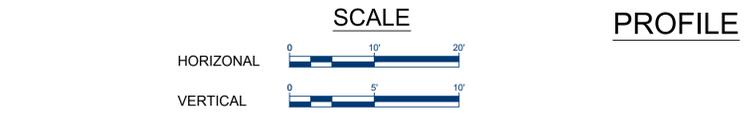


SUBMITTED BY: DOUGLAS GEORGE ECKARD, P.E. PROJECT DESIGNER	DATE: March 14, 2016	PLLOT DATE: March 15, 2016	SCALE: AS SHOWN
RECOMMENDED BY: CRAIG ROBERT TREEESE, P.E. DESIGN SECTION CHIEF - CAMBRIA OFFICE	DRAWN BY: DGE	CHECKED BY: CRT	
APPROVED BY: JEFFREY MEANS ENVIRONMENTAL PROGRAM MANAGER - CAMBRIA OFFICE	ACAD FILE NAME: Keystone Passive Treatment system.dwg		
ALL EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE			

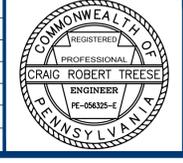
ACID MINE DRAINAGE ABATEMENT PROJECT KEYSTONE PASSIVE TREATMENT SYSTEM	
DERRY TOWNSHIP	WESTMORELAND COUNTY
CONTRACT NO. AMD 65(1183)103.1 CONVEYANCE SYSTEM PROFILE	
8 OF 15	



- LEGEND**
- EXISTING CONTOUR (5' INTERVAL)
 - EXISTING CONTOUR (1' INTERVAL)
 - DEPRESSION CONTOUR
 - EDGE OF WOODS
 - EDGE OF BRUSH
 - UNPAVED ROAD
 - STREAM OR EDGE OF WATER
 - CONTRACTOR'S WORK AREA
 - NPDES PERMIT BOUNDARY
 - PROPOSED CONTOUR (5' INTERVAL)
 - PROPOSED CONTOUR (1' INTERVAL)
 - 12" COMPOST FILTER SOCK



NO.	BY	DATE	DESCRIPTION
REVISIONS			



SUBMITTED BY:
DOUGLAS GEORGE ECKARD, P.E.
PROJECT DESIGNER

RECOMMENDED BY:
CRAIG ROBERT TREESE, P.E.
DESIGN SECTION CHIEF - CAMBRIA OFFICE

APPROVED BY:
JEFFREY MEANS
ENVIRONMENTAL PROGRAM MANAGER - CAMBRIA OFFICE

DATE: March 14, 2016
DRAWN BY: DGE
ACAD FILE NAME: Keystone Passive Treatment system.dwg

DATE: March 15, 2016
CHECKED BY: CRT

SCALE: AS SHOWN

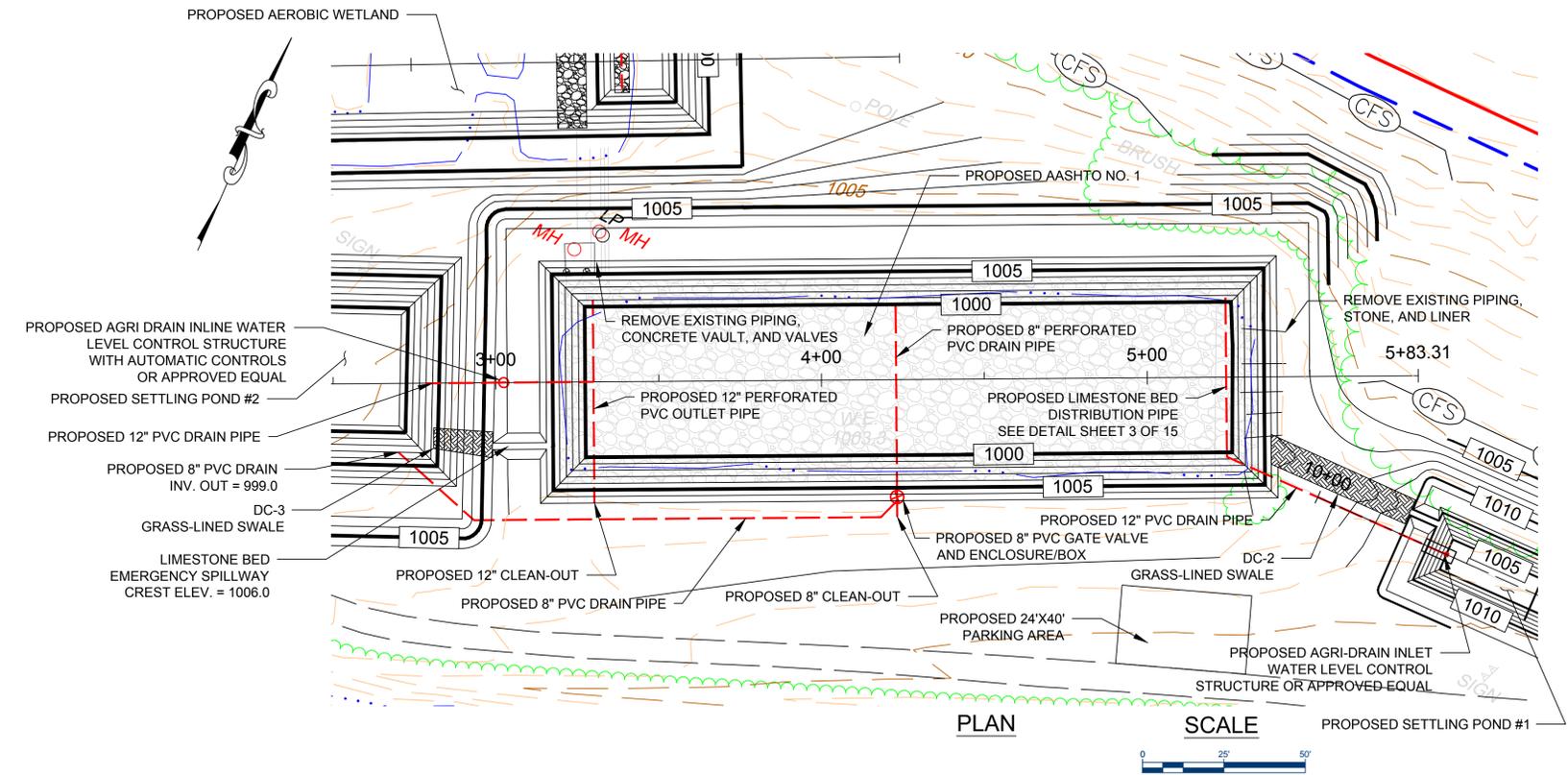
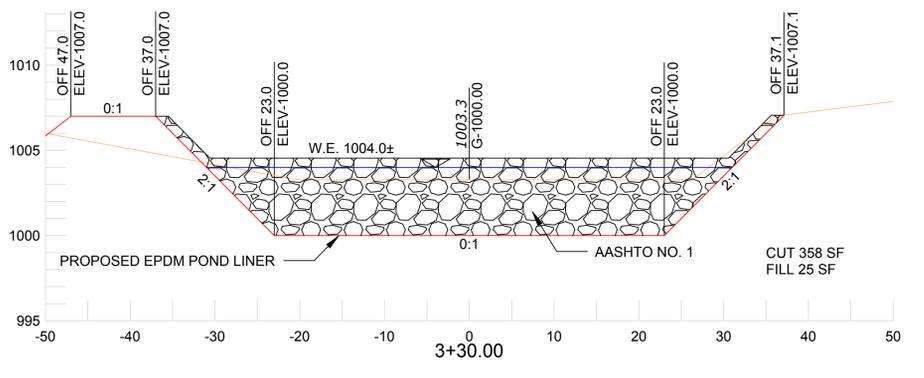
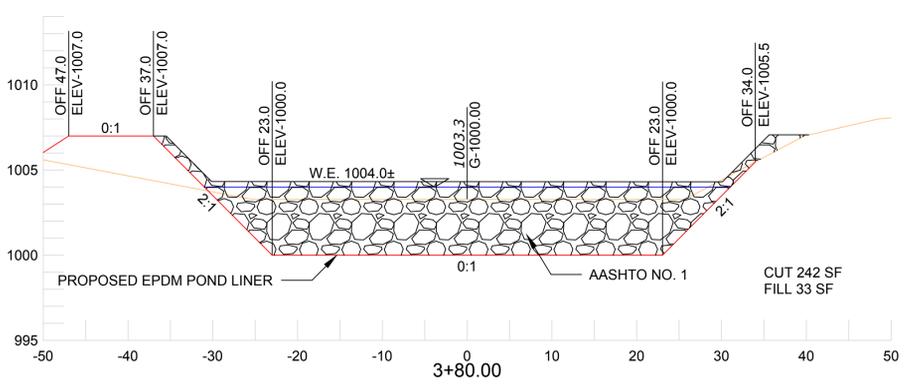
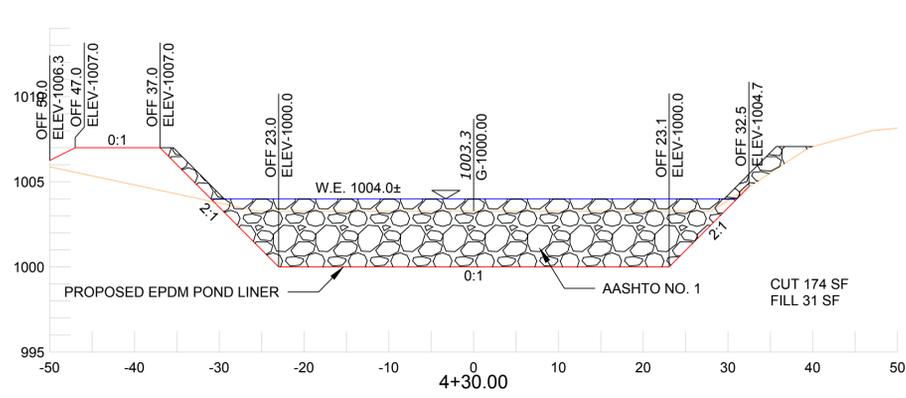
ALL EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE

ACID MINE DRAINAGE ABATEMENT PROJECT
KEYSTONE PASSIVE TREATMENT SYSTEM

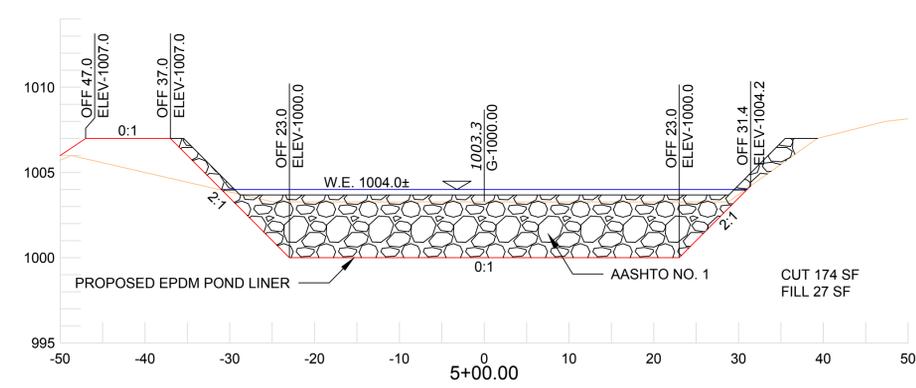
DERRY TOWNSHIP
WESTMORELAND COUNTY

CONTRACT NO. AMD 65(1183)103.1
SETTLING POND # 1

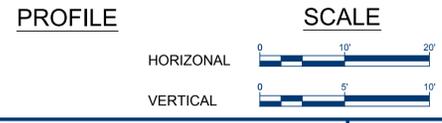
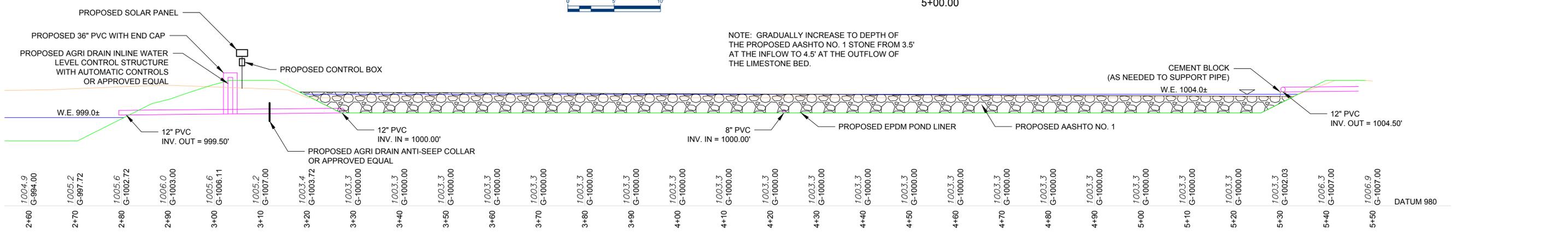
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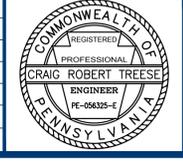
- LEGEND**
- 1035 EXISTING CONTOUR (5' INTERVAL)
 - 1030 EXISTING CONTOUR (1' INTERVAL)
 - DEPRESSION CONTOUR
 - EDGE OF WOODS
 - EDGE OF BRUSH
 - UNPAVED ROAD
 - STREAM OR EDGE OF WATER
 - CONTRACTOR'S WORK AREA
 - NPDES PERMIT BOUNDARY
 - 1440 PROPOSED CONTOUR (5' INTERVAL)
 - PROPOSED CONTOUR (1' INTERVAL)
 - 12" COMPOST FILTER SOCK



NOTE: GRADUALLY INCREASE TO DEPTH OF THE PROPOSED AASHTO NO. 1 STONE FROM 3.5' AT THE INFLOW TO 4.5' AT THE OUTFLOW OF THE LIMESTONE BED.



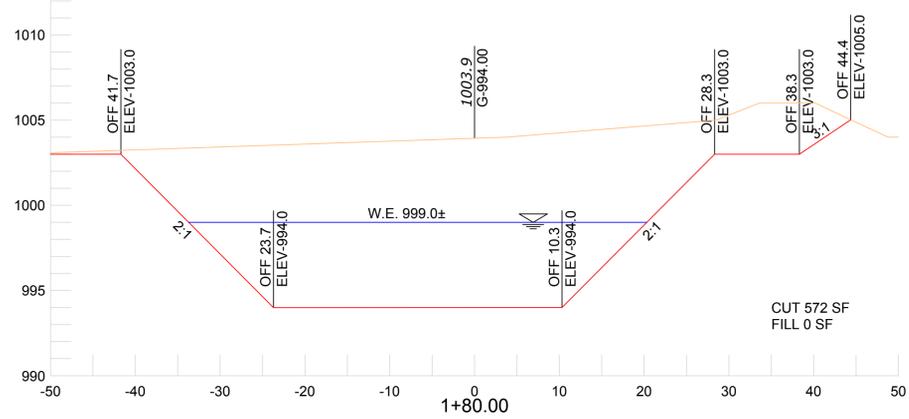
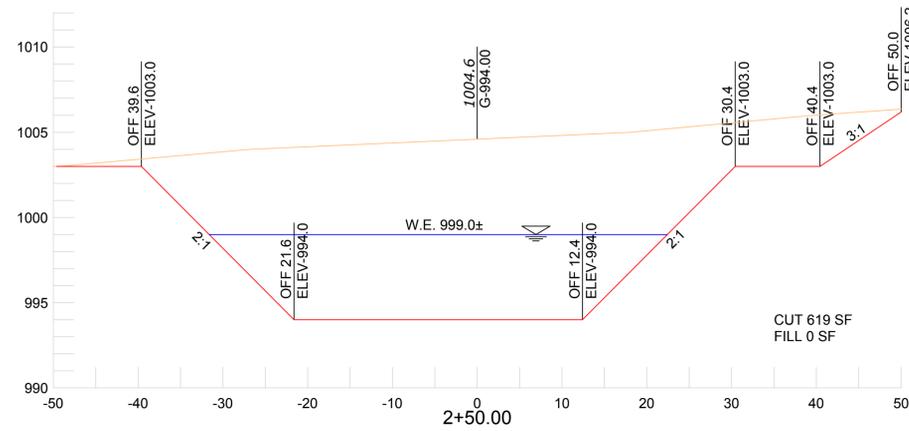
NO.	BY	DATE	DESCRIPTION
REVISIONS			



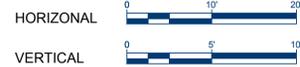
SUBMITTED BY: DOUGLAS GEORGE ECKARD, P.E.
 PROJECT DESIGNER
 RECOMMENDED BY: CRAIG ROBERT TREESE, P.E.
 DESIGN SECTION CHIEF - CAMBRIA OFFICE
 APPROVED BY: JEFFREY MEANS
 ENVIRONMENTAL PROGRAM MANAGER - CAMBRIA OFFICE

DATE: March 14, 2016
 CHECKED BY: DGE
 ACAD FILE NAME: Keystone Passive Treatment system.dwg
 ALL EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE

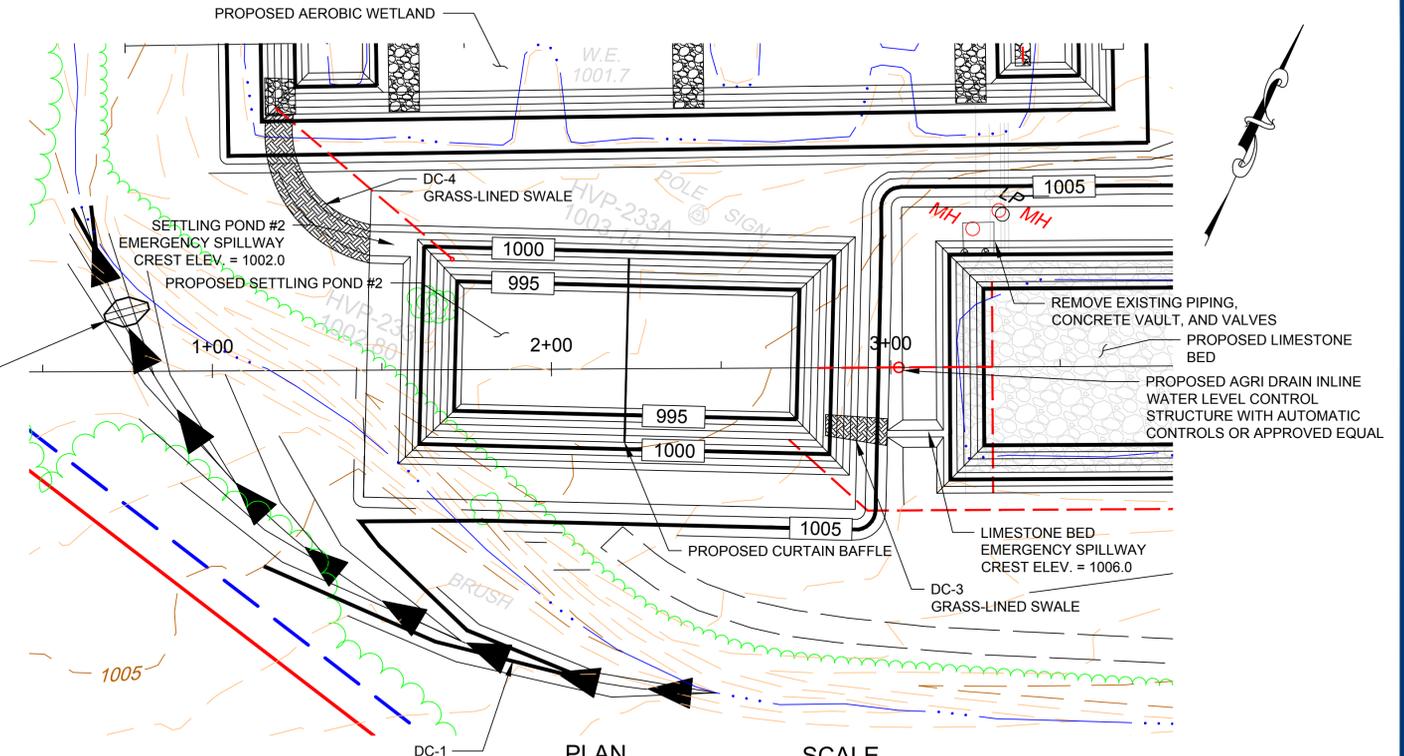
ACID MINE DRAINAGE ABATEMENT PROJECT
 KEYSTONE PASSIVE TREATMENT SYSTEM
 DERRY TOWNSHIP
 CONTRACT NO. AMD 65(1183)103.1
 LIMESTONE BED
 WESTMORELAND COUNTY
 DRAWING NUMBER
 10 OF 15



SCALE



PROPOSED ROCK FILTER
FOR DETAIL SEE SHEET 15 OF 15



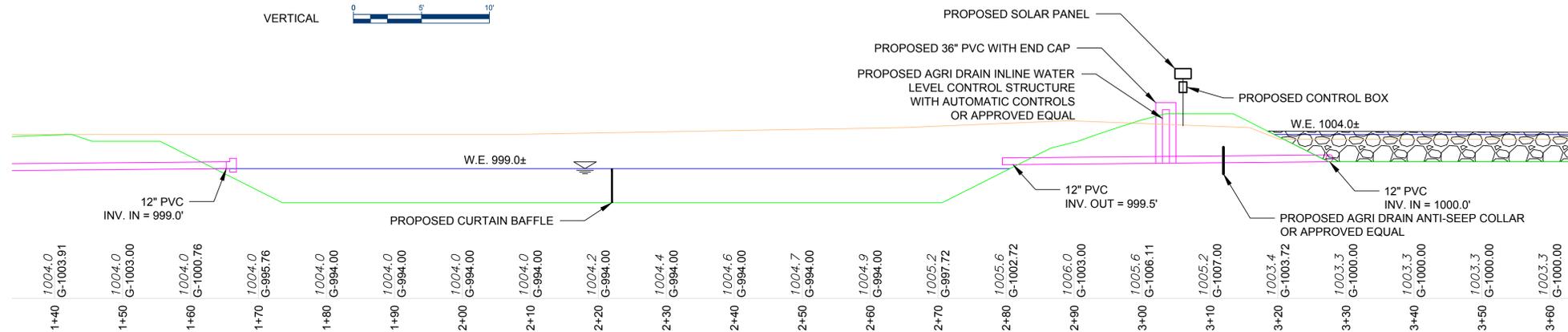
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SCALE



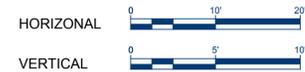
LEGEND

- EXISTING CONTOUR (5' INTERVAL)
- EXISTING CONTOUR (1' INTERVAL)
- DEPRESSION CONTOUR
- EDGE OF WOODS
- EDGE OF BRUSH
- UNPAVED ROAD
- STREAM OR EDGE OF WATER
- CONTRACTOR'S WORK AREA
- NPDES PERMIT BOUNDARY
- PROPOSED CONTOUR (5' INTERVAL)
- PROPOSED CONTOUR (1' INTERVAL)
- 12" COMPOST FILTER SOCK

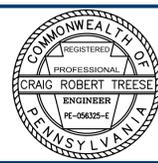


PROFILE

SCALE



NO.	BY	DATE	DESCRIPTION
REVISIONS			



SUBMITTED BY:
DOUGLAS GEORGE ECKARD, P.E.
PROJECT DESIGNER

RECOMMENDED BY:
CRAIG ROBERT TREESE, P.E.
DESIGN SECTION CHIEF - CAMBRIA OFFICE

APPROVED BY:
JEFFREY MEANS
ENVIRONMENTAL PROGRAM MANAGER - CAMBRIA OFFICE

DATE: March 14, 2016
DRAWN BY: DGE
ACAD FILE NAME: Keystone Passive Treatment system.dwg

PLLOT DATE: March 15, 2016
CHECKED BY: CRT

SCALE: AS SHOWN

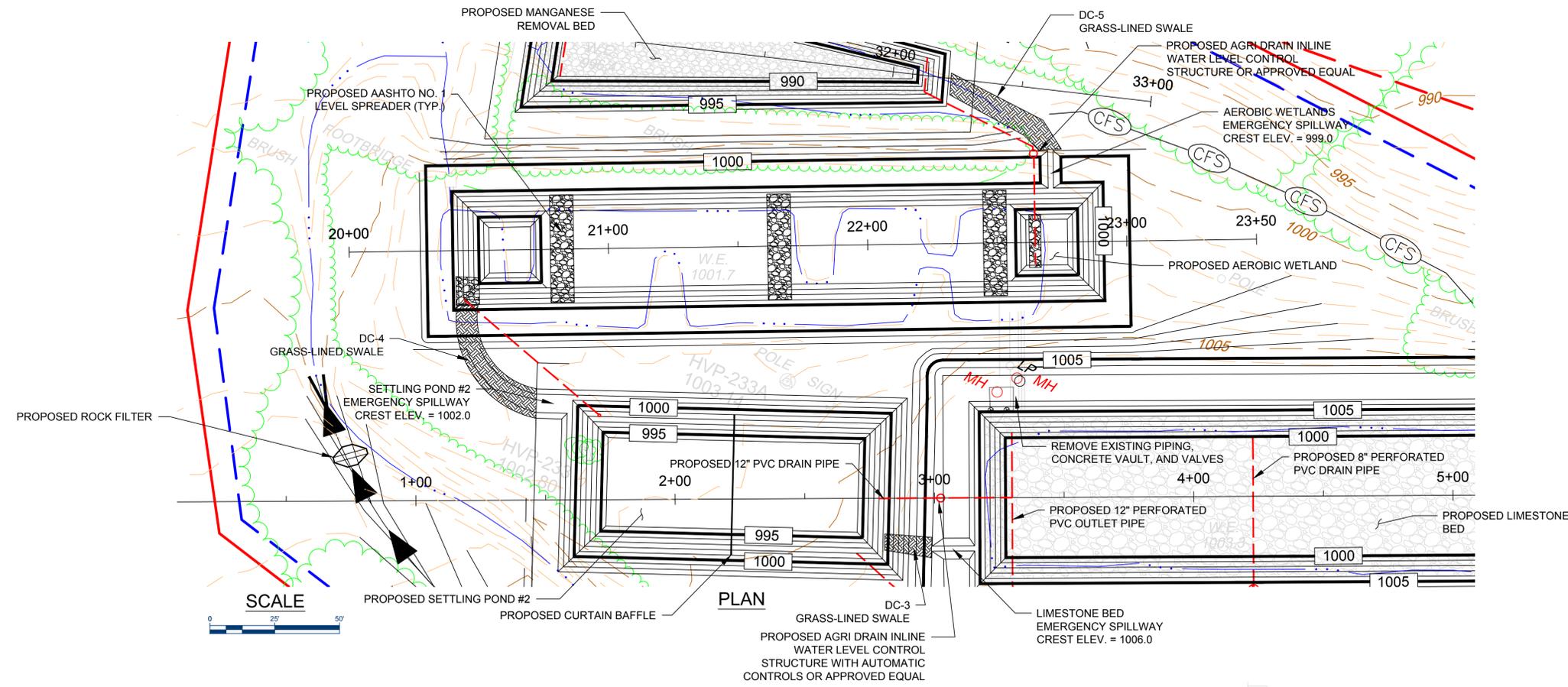
ALL EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE

ACID MINE DRAINAGE ABATEMENT PROJECT
KEYSTONE PASSIVE TREATMENT SYSTEM

DERRY TOWNSHIP
WESTMORELAND COUNTY

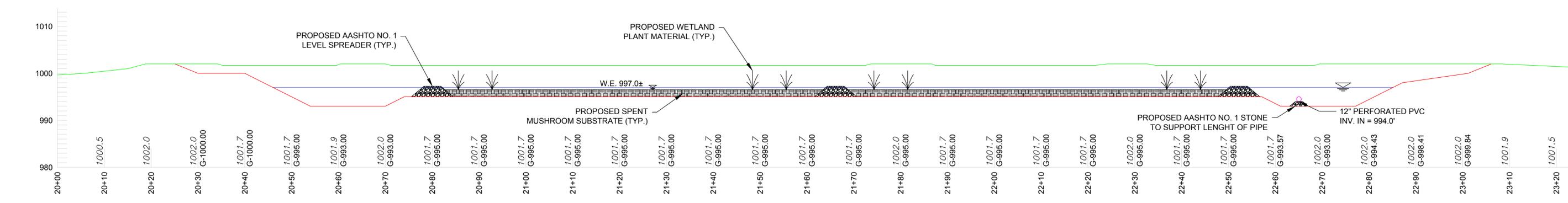
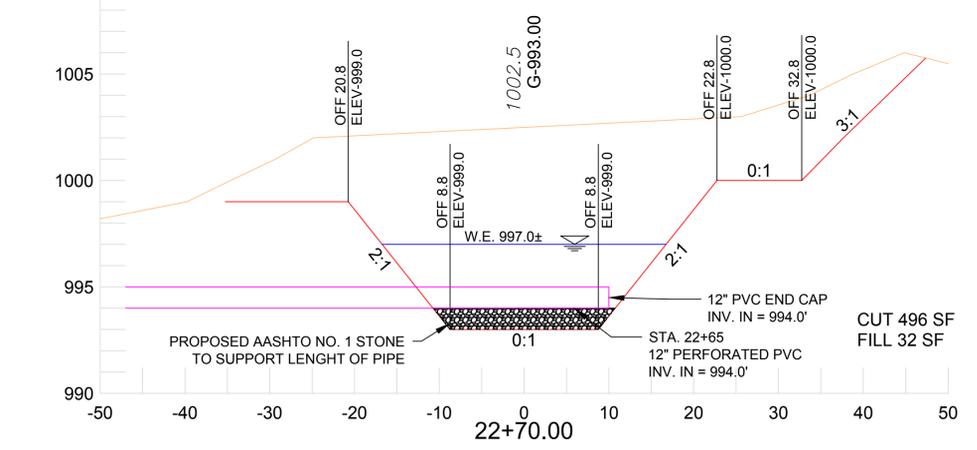
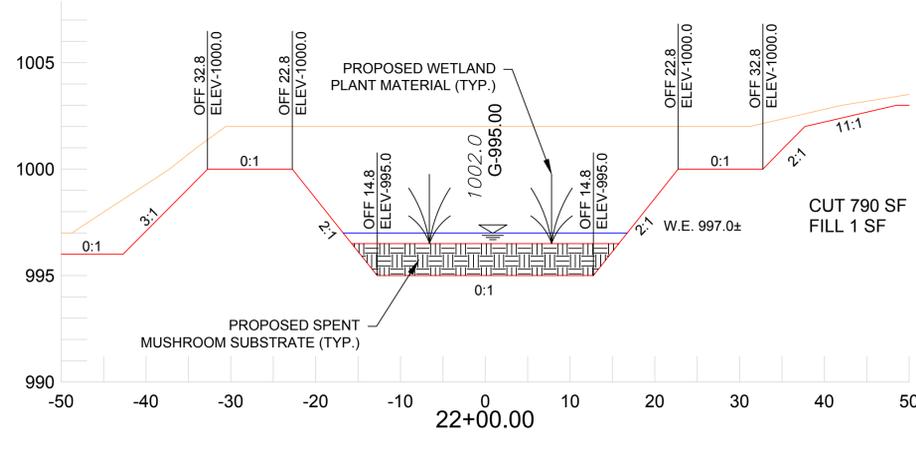
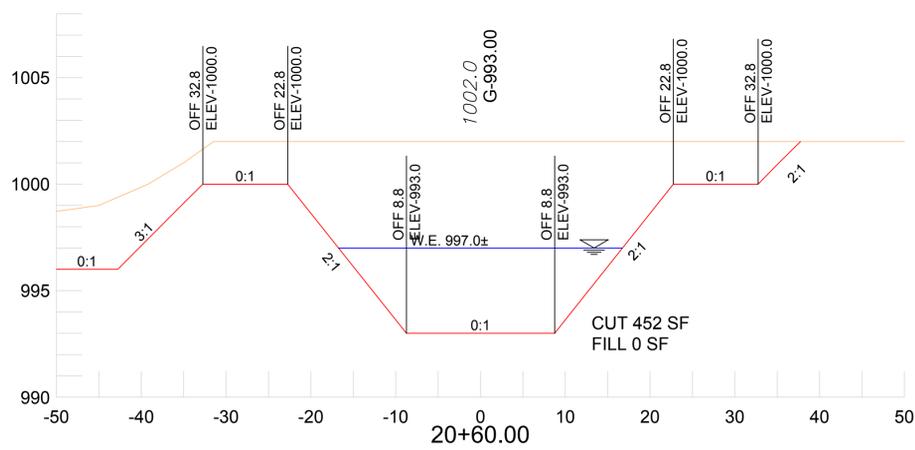
CONTRACT NO. AMD 65(1183)103.1
SETTLING POND #2

11 OF 15

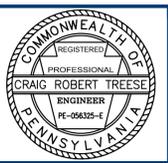


LEGEND

- EXISTING CONTOUR (5' INTERVAL)
- EXISTING CONTOUR (1' INTERVAL)
- DEPRESSION CONTOUR
- EDGE OF WOODS
- EDGE OF BRUSH
- UNPAVED ROAD
- STREAM OR EDGE OF WATER
- CONTRACTOR'S WORK AREA
- NPDES PERMIT BOUNDARY
- PROPOSED CONTOUR (5' INTERVAL)
- PROPOSED CONTOUR (1' INTERVAL)
- 12" COMPOST FILTER SOCK



NO.	BY	DATE	DESCRIPTION
REVISIONS			



SUBMITTED BY: DOUGLAS GEORGE ECKARD, P.E.
PROJECT DESIGNER

RECOMMENDED BY: CRAIG ROBERT TREESE, P.E.
DESIGN SECTION CHIEF - CAMBRIA OFFICE

APPROVED BY: JEFFREY MEANS
ENVIRONMENTAL PROGRAM MANAGER - CAMBRIA OFFICE

DATE: March 14, 2016
DRAWN BY: DGE
ACAD FILE NAME: Keystone Passive Treatment system.dwg

DATE: March 15, 2016
CHECKED BY: CRT

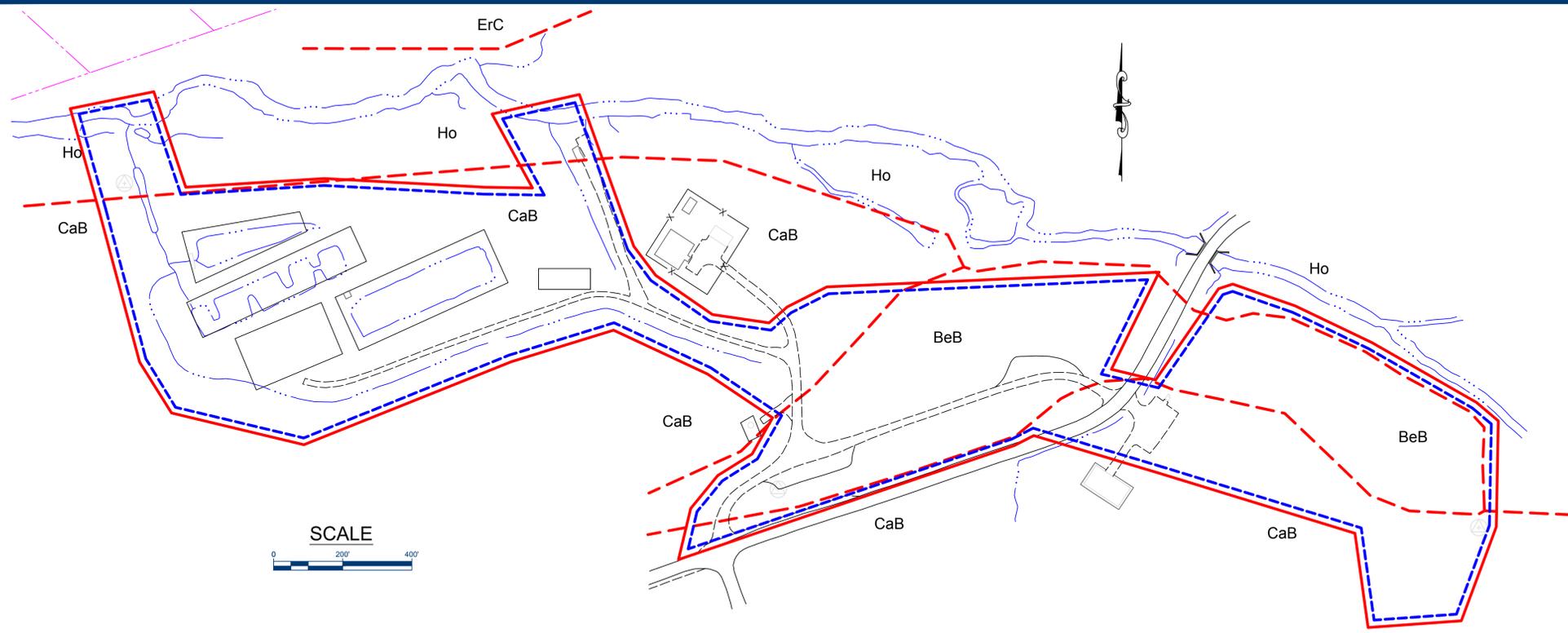
SCALE: 0 50 100'

ALL EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE

ACID MINE DRAINAGE ABATEMENT PROJECT
KEYSTONE PASSIVE TREATMENT SYSTEM

DERRY TOWNSHIP
CONTRACT NO. AMD 65(1183)103.1
AEROBIC WETLAND

WESTMORELAND COUNTY
DRAWING NUMBER
12 OF 15



BMP MAINTENANCE PROGRAM

E&S POLLUTION CONTROLS MUST BE CONSTRUCTED, STABILIZED AND FUNCTIONAL BEFORE PERFORMING EARTHWORK OPERATIONS WITHIN THE TRIBUTARY AREAS OF THOSE CONTROLS.

ALL FACILITIES UTILIZED IN THE CONTROL OF E&S DURING CONSTRUCTION SHALL BE MAINTAINED IN GOOD CONDITION. THE E&S POLLUTION CONTROL MEASURES SHALL BE INSPECTED FOLLOWING EVERY RAINFALL EVENT AND, AS A MINIMUM, ON A WEEKLY BASIS. SEDIMENT SHALL BE REMOVED WHEN THE TRAPPED SEDIMENT REACHES THE SPECIFIED LIMIT AND IF NECESSARY, THE E&S POLLUTION CONTROL FACILITY SHALL BE REPAIRED OR REPLACED IMMEDIATELY. TRAPPED SEDIMENT SHALL BE REMOVED AND SPREAD OVER THE GRADING AREA IN A LAYER NOT EXCEEDING SIX INCHES (6") THICK, THEN INCORPORATED INTO THE FILL AREAS WHEN DRIED.

- ROCK CONSTRUCTION ENTRANCE – THE STRUCTURE'S THICKNESS SHALL BE MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL SHALL BE MAINTAINED ON THE SITE FOR THIS PURPOSE. AT THE END OF EACH CONSTRUCTION DAY, OR MORE OFTEN AS NECESSARY, DIRT DEPOSITED ON PUBLIC ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE.
- COMPOST FILTER SOCK – ACCUMULATED SEDIMENT SHALL BE REMOVED AS REQUIRED TO KEEP ALL COMPOST FILTER SOCKS FUNCTIONAL. SEDIMENT DEPOSITS SHALL BE REMOVED WHEN ACCUMULATIONS REACH ONE-HALF (1/2) OF THE ABOVE GROUND HEIGHT OF THE SOCK. ALL UNDERCUT OR OVERTOPPED SECTIONS OF THE SOCK SHALL BE REPLACED IMMEDIATELY.
- DITCHES – ALL DITCHES SHALL BE MAINTAINED AT THE REQUIRED OR INTENDED CROSS-SECTIONS AND GRADES BY REPAIRING WASHOUTS, REMOVING SEDIMENT AND RE-ESTABLISHING ANY DAMAGED DITCH STABILIZATION. IF THE CROSS-SECTIONAL AREA IS DIMINISHED BY FIFTY PERCENT (50%), IT WILL BE CLEANED.
- DISPOSAL OF SEDIMENT – WHEN REMOVING SEDIMENT WHICH HAS ACCUMULATED IN THE ROCK CONSTRUCTION ENTRANCE, SILT FENCES, AND DITCHES, THE CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID THE POSSIBILITY OF ANY SEDIMENT LEAVING THE PROJECT SITE. ACCUMULATED SEDIMENT REMOVED FROM CONTROL STRUCTURES WILL BE REDISTRIBUTED OVER THE GRADED AREA OF THE PROJECT AND SEEDED AND MULCHED. SEDIMENT SHALL NOT BE ALLOWED TO ENTER THE WATERS OF THE COMMONWEALTH DURING EITHER SEDIMENT REMOVAL OR DISPOSAL OPERATIONS. AT NO TIME SHALL THE DISTURBED AREA EXCEED 2 ACRES WITHOUT PERMANENT SEED MULCH APPLIED.
- REMEDY GUARANTEE PERIOD – ONCE THE PROJECT IS ACCEPTED AS-BUILT BY THE DEPARTMENT, THE CONTRACTOR MUST WARRANT HIS WORK FOR ONE YEAR TO INSURE PERMANENT STABILIZATION IS ACHIEVED AS DETERMINED BY THE DEPARTMENT. IF ANY EROSION HAS OCCURRED, THEN THE CONTRACTOR IS RESPONSIBLE FOR MAKING ALL CORRECTIONS TO THE ERODED AREAS. ALSO, IF FOR ANY REASON THE VEGETATIVE GROWTH APPEARS TO BE UNSATISFACTORY, THE CONTRACTOR SHALL BE REQUIRED TO RE-SEED AND UNSATISFACTORY AREAS.

SOIL LEGEND, LIMITATIONS, AND RESOLUTIONS			
MAPPING UNIT	SOIL NAME	SOIL LIMITATION	RESOLUTION TO LIMITATION
BeB	BETHESDA VERY CHANNERY SILT LOAM, 0% TO 8% SLOPES	ACID PRODUCING MATERIAL	PROPER GRADING AND IMMEDIATE STABILIZATION WITH SEED AND MULCH
CaB	CAVODE SILT LOAM, 3% TO 8% SLOPES	POORLY DRAINED HIGH RUNOFF POTENTIAL	PROPER PUMPING PRACTICES FROM EXCAVATIONS
ErC	ERNEST SILT LOAM, 8% TO 15% SLOPES	ACID PRODUCING MATERIAL	PROPER GRADING AND IMMEDIATE STABILIZATION WITH SEED AND MULCH
Ho	HOLLY SILT LOAM, 0% TO 2% SLOPES	POORLY DRAINED FREQUENT FLOODING	PROPER PUMPING PRACTICES FROM EXCAVATIONS

RECYCLING/DISPOSAL OF MATERIALS

THE CONTRACTOR WILL DEVELOP AND IMPLEMENT PROCEDURES WHICH WILL ENSURE THAT THE PROPER MEASURES FOR DISPOSAL AND RECYCLING OF MATERIALS ASSOCIATED WITH OR FROM THE PROJECT SITE IN ACCORDANCE WITH DEPARTMENT OF ENVIRONMENTAL PROTECTION REGULATIONS. CONSTRUCTION WASTES INCLUDE, BUT ARE NOT LIMITED TO, EXCESS SOIL MATERIALS, BUILDING MATERIALS, CONCRETE WASH WATER, SANITARY WASTES, ETC. THAT COULD ADVERSELY IMPACT WATER QUALITY.

THE CONTRACTOR WILL INSPECT THE PROJECT AREA WEEKLY AND PROPERLY DISPOSE OF ALL CONSTRUCTION WASTES. MEASURES SHOULD BE PLANNED AND IMPLEMENTED FOR HOUSEKEEPING, MATERIALS MANAGEMENT, AND LITTER CONTROL. WHEREVER POSSIBLE, REUSABLE WASTE WILL BE SEGREGATED FROM OTHER WASTE AND STORED SEPARATELY FOR RECYCLING.

LEGEND

- SOIL BOUNDARY
- SOIL MAPPING UNIT
- UNPAVED ROAD
- STREAM OR EDGE OF WATER
- CONTRACTOR'S WORK AREA
- NPDES PERMIT BOUNDARY

EROSION AND SEDIMENTATION CONTROL NOTES:

- EROSION AND SEDIMENT CONTROLS MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL PRIOR TO SITE DISTURBANCE WITHIN THE TRIBUTARY OF THOSE CONTROLS.
- THE CONTRACTOR SHALL NOT DISTURB GROUND COVER AREAS BEYOND THOSE NECESSARY TO SATISFACTORILY COMPLETE THE REQUIRED WORK. EQUIPMENT STAGING AREAS SHALL BE LOCATED IN THE UPLAND AREAS REMOVED FROM SENSITIVE CULTURAL AND ENVIRONMENTAL RESOURCES.
- AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED (INCLUDING MIN. UNIFORM 70% VEGETATIVE COVER ESTABLISHED), TEMPORARY EROSION AND SEDIMENTATION CONTROLS MAY BE REMOVED. AREAS DISTURBED DURING THE REMOVAL OF THE CONTROLS MUST BE STABILIZED IMMEDIATELY.
- INSPECT COMPOST FILTER SOCK WEEKLY AND AFTER EACH RUNOFF EVENT.
- CLEAN AND/OR REPLACE PUMPED WATER FILTER BAGS WHEN 1/2 FULL. REPLACE DAMAGED FILTER BAGS IMMEDIATELY.
- ON GRADED AREAS WHERE PERMANENT SEEDING WILL NOT BE DONE WITHIN A PERIOD OF 20 DAYS AFTER THE GRADING OPERATIONS HAVE BEEN EITHER SUSPENDED OR COMPLETED, THE CONTRACTOR WILL APPLY A TEMPORARY SEED MIXTURE AND MULCH.
- ALL WORK ASSOCIATED WITH DRAINAGE ITEMS ON THIS PROJECT SHALL BE COMPLETED DURING PERIODS OF DRY WEATHER. THE CONTRACTOR SHALL AVOID WORKING DURING OR IMMEDIATELY FOLLOWING HEAVY PRECIPITATION EVENTS.
- ALL DEWATERING OPERATIONS SHALL DISCHARGE TO AN APPROVED SEDIMENT CONTROL FACILITY.
- RESTORE ALL GRADES 3:1 AND FLATTER WITH TYPE-1 SEED MIXTURE.
- UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT POLLUTION CONTROL FACILITIES MUST BE PROPERLY MAINTAINED. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL TEMPORARY AND PERMANENT CONTROLS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, AND REMULCHING MUST BE PERFORMED IMMEDIATELY.
- THE CONTRACTOR SHALL COORDINATE EROSION AND SEDIMENT POLLUTION CONTROLS FOR OFF-SITE FILL/BORROW SITES DIRECTLY WITH THE COUNTY CONSERVATION DISTRICT.
- THE CONTRACTOR SHALL ENSURE THAT PROPER MECHANISMS ARE IN PLACE TO CONTROL WASTE MATERIALS. CONSTRUCTION WASTES INCLUDE, BUT ARE NOT LIMITED TO, EXCESS SOIL MATERIALS, SANITARY WASTES, ETC. ALL RECYCLABLE MATERIALS SHALL BE SEPARATED AND TAKEN TO AN APPROPRIATE RECYCLING FACILITY. ALL OTHER WASTE MATERIALS SHALL BE DISPOSED OF OFF-SITE AT AN APPROVED SITE. EXCESS SOIL WASTES SHALL COMPLY WITH NPDES PERMITTING REQUIREMENTS AND SHALL IMPLEMENT BEST MANAGEMENT PRACTICES.

BMP MAINTENANCE PROGRAM

THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTENANCE OF BOTH TEMPORARY AND PERMANENT CONTROL FACILITIES FOR THE DURATION OF THE CONSTRUCTION PROJECT. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR MAINTENANCE OF ALL CONTROL FACILITIES UNTIL STABILIZATION HAS OCCURRED AND IS VERIFIED BY THE COUNTY CONSERVATION DISTRICT AND PA DEPARTMENT OF ENVIRONMENTAL PROTECTION.

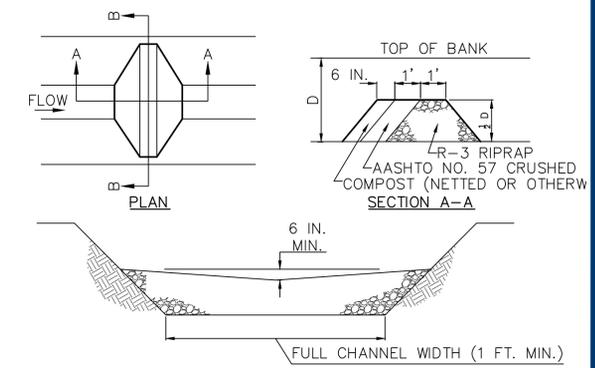
UPON STABILIZATION, THE CONTRACTOR WILL BE RESPONSIBLE FOR REMOVAL OF ALL TEMPORARY CONTROL FACILITIES. BEFORE ANY TEMPORARY EROSION CONTROL STRUCTURES ARE REMOVED, HOWEVER, A PERENNIAL VEGETATIVE COVERAGE WITH A UNIFORM DENSITY OF 70% ACROSS THE DISTURBED AREAS MUST BE ACHIEVED.

THE CONTRACTOR IS REQUIRED TO INSPECT BOTH THE TEMPORARY AND PERMANENT FACILITIES ON A WEEKLY BASIS UNTIL STABILIZATION IS ACHIEVED. IN ADDITION TO THE WEEKLY INSPECTION SCHEDULE, EACH FACILITY WILL BE INSPECTED AFTER EACH MEASURABLE RUNOFF EVENT. A TIME LIMIT OF ONE WORKING DAY IS PERMITTED FOR MAKING REPAIRS TO EROSION AND SEDIMENT POLLUTION CONTROLS THAT REQUIRE REPAIRS/MAINTENANCE.

ACCUMULATED SEDIMENT REMOVED FROM CONTROL STRUCTURES WILL BE REDISTRIBUTED OVER THE GRADED AREA OF THE PROJECT AND SEEDED AND MULCHED. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AN ADEQUATE SUPPLY OF ADDITIONAL EROSION AND SEDIMENTATION CONTROL MATERIALS TO BE USED IN THE EVENT OF EMERGENCY REPAIRS OF SOIL EROSION AND SEDIMENT CONTROLS

SEQUENCE OF BMP INSTALLATION AND REMOVAL

- INSTALL THE ROCK CONSTRUCTION ENTRANCE.
- CLEAR TREES AND BRUSH AND DISPOSE AS NECESSARY.
- INSTALL COMPOST FILTER SOCKS AS NEEDED.
- GRADE SITE AS SHOWN ON PLAN.
- INSTALL SITE PIPING AS SHOWN ON THE PLAN.
- CONSTRUCT DIVERSION DITCHES AT LOCATIONS AS SHOWN ON THE PLAN.
- THE EXISTING ACID MINE DRAINAGE WILL BE DIVERTED DURING THE REHABILITATION EXCAVATION OPERATIONS. ANY ACIDITY IN EXCESS OF ALKALINITY MUST BE NEUTRALIZED, AND ALL TOTAL IRON IN EXCESS OF THE CLEAN STREAMS LAW, AND CHAPTER 87 MUST BE SETTLED BEFORE THE WATER IS DISCHARGED INTO THE EXISTING DRAINAGE-WAYS/STREAMS OFF SITE. ONCE THE PROPOSED PASSIVE TREATMENT SYSTEM IS COMPLETED AND THE FLOW IS RE-ESTABLISHED, FURTHER TREATMENT WILL NOT BE REQUIRED.
- WHEN POSSIBLE, PERFORM SITE EARTHWORK TO PROVIDE POSITIVE DRAINAGE OF DISTURBED SITE RUNOFF. DURING CONSTRUCTION, THE LIMITS OF GRADING ACTIVITIES SHALL BE CONTINUALLY MINIMIZED IN ORDER TO REDUCE THE AMOUNT OF EXPOSED SOIL.
- STABILIZE THE FINAL GRADE WITH GRASS SEED AND MULCH ACCORDING TO THE SEEDING SPECIFICATIONS.
- ONCE THE ENTIRE SITE HAS BEEN PERMANENTLY STABILIZED, AS APPROVED BY THE DEPARTMENT, REMOVE THE COMPOST FILTER SOCKS, ROCK CONSTRUCTION ENTRANCE, AND ANY OTHER TEMPORARY E&S CONTROL DEVICES. AFTER REMOVING THESE DEVICES, GRADE THEIR DISTURBED AREAS AND STABILIZE WITH PERMANENT GRASS SEED AND MULCH. THE STANDARD FOR PERMANENT STABILIZATION SHALL BE A UNIFORM GRASS COVERAGE OR DENSITY OF SEVENTY PERCENT (70%) ACROSS THE DISTURBED AREA.



ROCK FILTER NO.	LOCATION	D (FT)	RIPRAP SIZE (R-)	
1	DC-1	2	3	

FOR D ≥ 3 FT. – USE R-4
FOR D ≥ 2 FT. TO D < 3 FT. – USE R-3
NOT APPLICABLE FOR D < 2 FT.

NOTES:
SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF THE FILTERS.
IMMEDIATELY UPON STABILIZATION OF EACH CHANNEL, REMOVE ACCUMULATED SEDIMENT, REMOVE ROCK FILTER, AND STABILIZE DISTURBED AREAS.

ROCK FILTER
NOT TO SCALE



NO.	BY	DATE	DESCRIPTION
REVISIONS			



SUBMITTED BY: DOUGLAS GEORGE ECKARD, P.E.
PROJECT DESIGNER
RECOMMENDED BY: CRAIG ROBERT TREESE, P.E.
DESIGN SECTION CHIEF - CAMBRIA OFFICE
APPROVED BY: JEFFREY MEANS
ENVIRONMENTAL PROGRAM MANAGER - CAMBRIA OFFICE

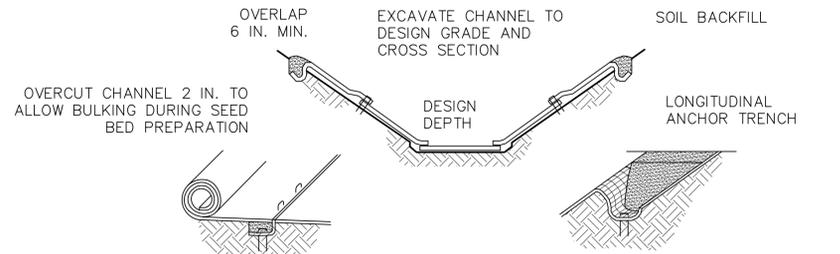
DATE: March 14, 2016
DRAWN BY: DGE
ACAD FILE NAME: Keystone Passive Treatment system.dwg
PLOT DATE: March 15, 2016
CHECKED BY: CRT
SCALE: AS SHOWN
ALL EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE

ACID MINE DRAINAGE ABATEMENT PROJECT
KEYSTONE PASSIVE TREATMENT SYSTEM

DERRY TOWNSHIP
WESTMORELAND COUNTY

CONTRACT NO. AMD 65(1183)103.1
E&S CONTROL DETAILS

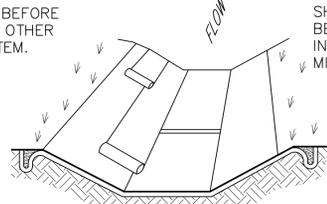
14 OF 15



INTERMITTENT CHECK SLOT

LONGITUDINAL ANCHOR TRENCH

PREPARE SOIL AND APPLY SEED BEFORE INSTALLING BLANKETS, MATS, OR OTHER TEMPORARY CHANNEL LINER SYSTEM.



ISOMETRIC VIEW

SHINGLE-LAP SPliced ENDS OR BEGIN NEW ROLL IN AN INTERMITTENT CHECK SLOT MIN. SHINGLE LAP=6 IN.



CHANNEL CROSS-SECTION
(LOOKING DOWNSTREAM)

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

CHANNEL NO.	STATIONS	BOTTOM WIDTH B (FT)	DEPTH D (FT)	TOP WIDTH W (FT)	Z1 (FT)	Z2 (FT)	LINING *
DC-1	0+50 TO 2+50 LT & RT		2	6	2	2	TURF REINFORCEMENT MAT
DC-2	10+00 LT	2	1	6	2	2	GRASS LINED
DC-3	3+00 RT	1	2	10	2	2	GRASS LINED
DC-4	1+50 LT	1	2	10	2	2	GRASS LINED
DC-5	22+50 LT	1	2	10	2	2	GRASS LINED
DC-6	30+50 LT	3	2	11	2	2	R-3 ROCK

NOTES:

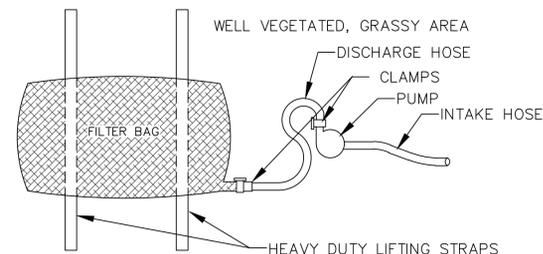
ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES.

CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. CHANNEL SHALL BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION. 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.

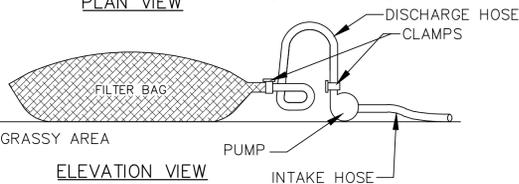
NO MORE THAN ONE THIRD OF THE SHOOT (GRASS LEAF) SHALL BE REMOVED IN ANY MOWING. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED. EXCESS VEGETATION SHALL BE REMOVED FROM PERMANENT CHANNELS TO ENSURE SUFFICIENT CHANNEL CAPACITY.

VEGETATED CHANNEL

NOT TO SCALE



PLAN VIEW



ELEVATION VIEW

NOTES:

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
AVG. WIDE WIDTH STRENGTH	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

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.

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.

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.

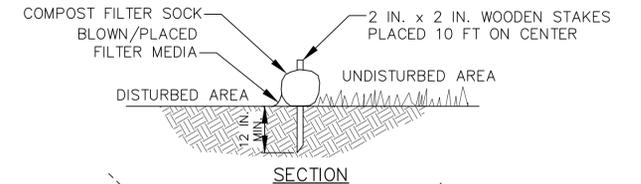
THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

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.

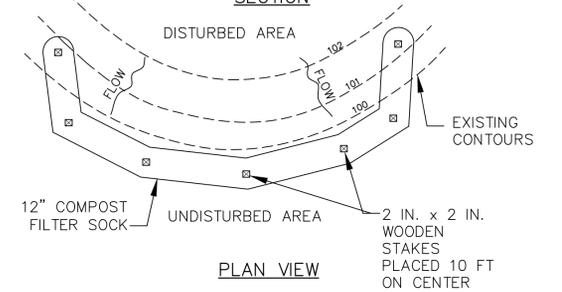
FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

PUMPED WATER FILTER BAG

NOT TO SCALE



SECTION



PLAN VIEW

NOTES:

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.

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.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

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.

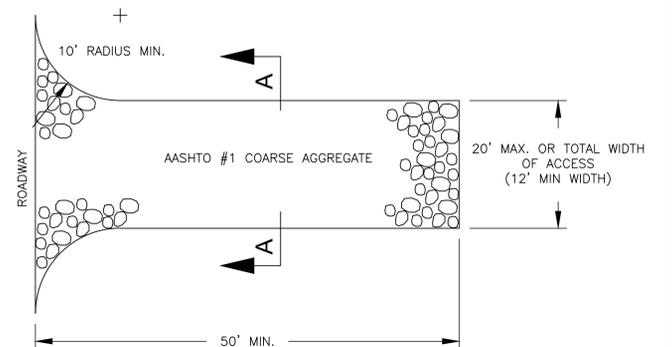
COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE COMPOST FILTER SOCKS 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.

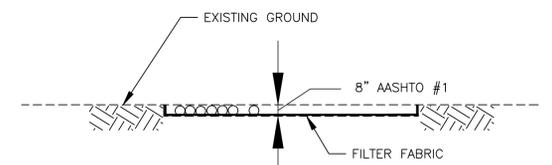
COMPOST FILTER SOCK

NOT TO SCALE



ROCK CONSTRUCTION ENTRANCE

NO SCALE

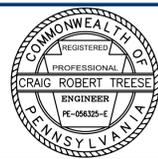


ROCK CONSTRUCTION ENTRANCE SECTION A-A

NO SCALE



NO.	BY	DATE	DESCRIPTION
REVISIONS			



SUBMITTED BY: DOUGLAS GEORGE ECKARD, P.E.
PROJECT DESIGNER
RECOMMENDED BY: CRAIG ROBERT TREESE, P.E.
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ENVIRONMENTAL PROGRAM MANAGER - CAMBRIA OFFICE

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DRAWING NUMBER: 15 OF 15