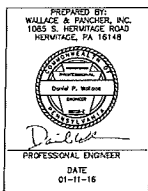


DISTRICT	COUNTY	MUNICIPALITY	BOROUGH	ROUTE	SECTION	TOTAL SHEETS
11-0	BEAVER	NEW SPENCER TOWNSHIP	COUNTY BOROUGH	SR 2004	B08	39

COMMONWEALTH OF PENNSYLVANIA  
  
DEPARTMENT OF TRANSPORTATION

STREAM RELOCATION AND MITIGATION PLAN  
FOR  
STATE ROUTE 2004 SECTION B08  
IN BEAVER COUNTY

CROWS RUN STREAM RELOCATION 1:	FROM STA.	<u>31+60</u>	TO STA.	<u>43+00</u>	EXISTING LENGTH	<u>1311</u>	FT.	PROPOSED LENGTH	<u>1140</u>	FT.
CROWS RUN STREAM RESTORATION AREA 1:	FROM STA.	<u>43+00</u>	TO STA.	<u>47+10</u>	EXISTING LENGTH	<u>410</u>	FT.	PROPOSED LENGTH	<u>410</u>	FT.
CROWS RUN STREAM RELOCATION 2:	FROM STA.	<u>47+10</u>	TO STA.	<u>55+00</u>	EXISTING LENGTH	<u>802</u>	FT.	PROPOSED LENGTH	<u>790</u>	FT.
CROWS RUN STREAM RELOCATION 3:	FROM STA.	<u>64+75</u>	TO STA.	<u>79+50</u>	EXISTING LENGTH	<u>1702</u>	FT.	PROPOSED LENGTH	<u>1475</u>	FT.
CROWS RUN STREAM RELOCATION 4:	FROM STA.	<u>83+10</u>	TO STA.	<u>93+00</u>	EXISTING LENGTH	<u>1054</u>	FT.	PROPOSED LENGTH	<u>1000</u>	FT.
PINE RUN:	FROM STA.	<u>N/A</u>	TO STA.	<u>N/A</u>	EXISTING LENGTH	<u>0</u>	FT.	PROPOSED LENGTH	<u>117.5</u>	FT.
SNAKE RUN:	FROM STA.	<u>N/A</u>	TO STA.	<u>N/A</u>	EXISTING LENGTH	<u>0</u>	FT.	PROPOSED LENGTH	<u>49</u>	FT.
TOTAL STREAM LENGTH:						9893 LF.			9300 LF.	



**TABULATION OF PROPERTY OWNERS**

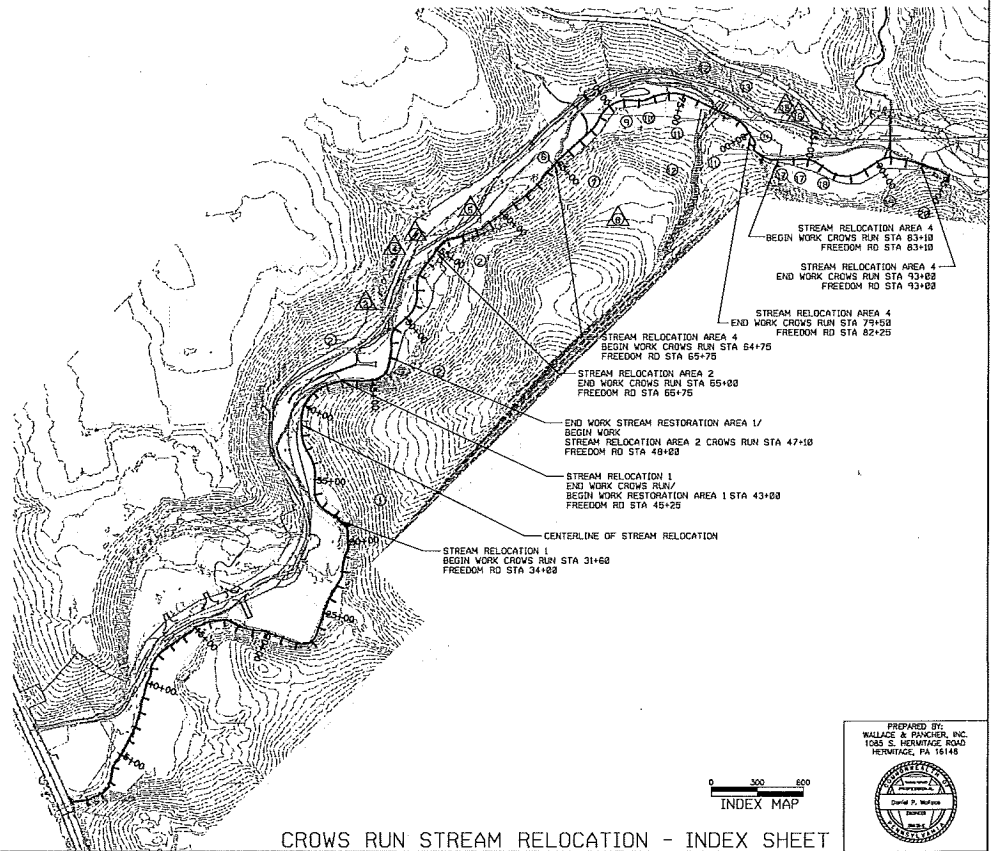
- |                                       |                                    |
|---------------------------------------|------------------------------------|
| ① EUGENE A & MARLYN TROMBETTO         | ⑩ DENNIS J & JOCELYN SHARPLESS     |
| ② NICK BATHY                          | ⑪ ROBERT BISCEGLIA                 |
| ③ DONALD GENE & JOANNE MARIE PETCOVIC | ⑫ HERBERT & DENNIS J SHARPLESS     |
| ④ WILLIAM T COOK II                   | ⑬ TIMOTHY H REDNARD                |
| ⑤ JOHN L & VELMA L TOSH               | ⑭ LESLIE J & BESSIE H TENNEY       |
| ⑥ LAWRENCE J & MICHELE M HANDBY       | ⑮ ELIZABETH J RALSTON              |
| ⑦ WALTER J BAKER                      | ⑯ CLARENCE H & HILDA L WHITPLE     |
| ⑧ KENNETH R TAYLOR JR                 | ⑰ BARNES, GREGO & FIORENTINO ET AL |
| ⑨ WOODROW & MARTHA PELFREY            | ⑱ RAYMOND L BORG                   |
| ⑫ TERRY L & LOIS L MILLER             | ⑳ RAYMOND R & SALLY ROSEFIN        |

INDEX OF SHEETS	
DESCRIPTION	SHEET NO.
TITLE SHEET	1
INDEX SHEET	2
PROJECT QUANTITY SHEET	3
GENERAL NOTES	4 TO 6
DETAILS	8 TO 12
PROPOSED PLAN AND PROFILE	13 TO 16
EAS PLANS	17 TO 23
PLANTING PLAN	21 TO 24
CROSS SECTIONS	24 TO 36

**LEGEND**

- PLAN AND PROFILE SHEETS
- PARCEL IDENTIFICATION NUMBER
- △ PARCEL IDENTIFICATION NUMBER NO TAX

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
11-0	BEAVER	2004	008	2 of 39
NEW SEWAGE TOWNSHIP AND CONANT BOROUGH				
REVISION NUMBER	REVISIONS			DATE BY



DRAWN BY	MAC
CHECKED BY	DPW
DATE	01/06/2016



**CROWS RUN STREAM RELOCATION - INDEX SHEET**



DISTRICT	COUNTY	ROUTE	SECTION	SHEET
11-0	BEAVER	2004	BOB	4 of 39
NEW SENECAVILLE TOWNSHIP AND CONRAW BOROUGH				
DESIGN	REVISIONS	DATE	BY	

EROSION AND SEDIMENT POLLUTION CONTROL PLAN

**MAINTENANCE PROGRAM**

1. THE CONTRACTOR SHALL CHECK ON A DAILY BASIS TO ENSURE THAT NO EXPOSED AREA IS ALLOWED TO REMAIN FREELY WITHOUT EROSION AND SEDIMENT CONTROL. IF EXPOSED AREAS ARE FOUND, CONTROL MEASURES SHALL BE ESTABLISHED ACCORDING TO THE ATTACHED SPECIFICATIONS IMMEDIATELY.
2. DURING CONSTRUCTION, ALL TEMPORARY CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER EVERY MEASURABLE STORM RUNOFF EVENT BY THE CONTRACTOR. AREAS NOT MEETING THE SPECIFICATIONS AND PLAN STANDARDS SHALL BE REPAIRED BY THE CONTRACTOR IMMEDIATELY OR AS INDICATED BELOW IN THE MAINTENANCE OF SPECIFIC CONTROL DEVICES.
3. STREAM RELOCATIONS AND PERMANENT STREAM DESIGN FEATURES WILL BE MONITORED, AS REQUIRED BY THE CHAPTER 105 PERMIT, FOR THE DURATION OF THE MONITORING PERIOD. ANY MAINTENANCE IDENTIFIED DURING THE MONITORING PERIOD WILL BE ADDRESSED AS NEEDED.
4. ALL EROSION CONTROLS SHALL REMAIN IN PLACE UNTIL A UNIFORM 70% PERENNIAL VEGETATIVE COVER IS ESTABLISHED. THE CONTROLS SHALL BE MAINTAINED PROPERLY, ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRASSING, RESEEDING, RE-MULCHING AND RE-METTING, MUST BE PERFORMED IMMEDIATELY.
6. SEDIMENT REMOVED FROM SILT FENCE, SEDIMENT BASINS, ROCK FILTERS AND RIP-RAP AREAS SHALL BE MOVED WITH THREE PARTS FILL MATERIAL TO ONE PART SEDIMENT AND SPREAD THROUGHOUT THE CONSTRUCTION SITE.

**MAINTENANCE OF SPECIFIC CONTROL DEVICES SHALL BE AS FOLLOWS:**

**FILTER SOCK**

1. FILTER SOCK INSTALLATION WILL BE INSPECTED WEEKLY AND AFTER EVERY PRECIPITATION EVENT WHERE 1/2" OF RAIN OR MORE HAS FALLEN IN A 24-HOUR PERIOD. ANY NECESSARY REPAIRS WILL BE MADE IMMEDIATELY.
2. ACCUMULATED SEDIMENTS WILL BE REMOVED AS REQUIRED TO KEEP THE FILTER SOCK FUNCTIONAL. IN ALL CASES REMOVE DEPOSITS WHERE ACCUMULATIONS REACH 1/2" ABOVE GROUND HEIGHT OF THE FILTER SOCK.
3. CONTRACTOR WILL ADHERE TO MANUFACTURER'S RECOMMENDATIONS FOR REPLACING FILTER SOCK DUE TO WEATHERING.
4. ROCK FILTER SOCKS SHOULD BE INSTALLED ALONG THE FILTER SOCK AT POINTS OF FREQUENT FAILURES OR LOCATIONS WHERE A CONCENTRATED POINT OF FLOW HAS DEVELOPED.

**ROCK CONSTRUCTION ENTRANCE**

1. THE ROCK CONSTRUCTION ENTRANCE THICKNESS WILL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSION BY ADDING ROCK.
2. A STOCK PILE OF ROCK MATERIAL WILL BE MAINTAINED ON SITE FOR THIS PURPOSE.
3. AT THE END OF EACH CONSTRUCTION DAY, ALL SEDIMENT DEPOSITED ON PUBLIC ROADWAYS WILL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE.
4. WASHING THE ROADWAY WITH WATER WILL NOT BE PERMITTED.

**SEEDING AND MULCHING**

1. AFTER SEEDING AND SOIL SUPPLEMENTS WORK ON A SLOPE HAS BEEN SATISFACTORILY COMPLETED, IF A SLOPE FAILURE OCCURS THAT REQUIRES RESEEDING, EXCAVATION OR ESTABLISHMENT OF A NEW SLOPE, THEN REAPPLY SOIL SUPPLEMENTS AND RESEED, AS SPECIFIED.
2. PROPERLY MAINTAIN MULCHED AREAS UNTIL THE ENTIRE PROJECT HAS BEEN COMPLETED. PROMPTLY REAPPLY MULCH MATERIALS THAT BECOME DISLOADED OR LOST DUE TO WIND, RAIN, FIRE OR OTHER CAUSES, AT INITIAL OR HOISTED RATES, AS DIRECTED.
3. SOIL SUPPLEMENTS SHALL BE USED AND/OR APPLIED PURSUANT TO SECTION 884 OF PENNDOT 408 SPECIFICATIONS, LATEST EDITION.

**WATER DIVERSION DEVICE**

1. THE DIKE STRUCTURE WILL BE INSPECTED DAILY BEFORE COMMENCING OR CONTINUING CONSTRUCTION.
2. ANY NECESSARY MAINTENANCE OR REPAIRS TO THE DIKE STRUCTURE WILL BE COMPLETED PRIOR TO THE BEGINNING OR CONTINUING CONSTRUCTION ACTIVITIES EACH DAY.
3. CONTRACTOR MAY PROPOSE AN ALTERNATIVE DIVERSION METHOD AND MUST BE APPROVED BY PENNDOT.

**RECYCLING AND DISPOSAL OF CONSTRUCTION WASTE**

1. RECYCLING OR DISPOSAL OF MATERIALS ASSOCIATED WITH OR FROM THIS PROJECT SITE SHALL BE UNDER TAKEN IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION RULES AND REGULATIONS.

2. EXCEPT FOR ITEMS OR MATERIALS INDICATED TO BE REUSED, SALVAGED, REINSTALLED, OR OTHERWISE INDICATED TO REMAIN ON THE PROPERTY, DEMOLISHED OR EXCAVATED MATERIAL SHALL BE REMOVED FROM THE SITE.

3. SEDIMENT REMOVED FROM CONTROL FACILITIES AS A PART OF REGULAR MAINTENANCE SHALL BE DISPOSED UP SLOPE OF THE CONTROL FACILITY.

4. MATERIALS SLATED FOR REMOVAL FROM THE SITE SHALL BE DISPOSED OF IN ACCORDANCE WITH ANY AND ALL APPLICABLE MUNICIPAL OR OTHER GOVERNMENT AGENCY CURRENT REGULATIONS. DEBRIS SHALL NOT BE PERMITTED TO ACCUMULATE ON THE JOB-SITE.

5. DUST AND DIRT SHALL BE HELD TO A MINIMUM DURING CONSTRUCTION.

6. AT THE COMPLETION OF WORK, THE ENTIRE WORK AREA WILL BE CLEAN AND LEFT IN A NEAT CONDITION, FREE OF RUBBISH AND DEBRIS.

**STANDARD EROSION AND SEDIMENTATION CONTROL PLAN, NOTES**

1. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL EROSION & SEDIMENT CONTROLS NEEDED TO ESTABLISH MAJOR ROADS, COORDINATE THE EROSION & SEDIMENT CONTROL MEASURES WITH THE COUNTY CONSERVATION DISTRICT.
2. EROSION & SEDIMENT CONTROLS MUST BE CONSTRUCTED, STABILIZED AND FUNCTIONAL BEFORE SITE DISTURBANCE CAN TAKE PLACE WITHIN THE TRIBUTARY AREAS OF THOSE CONTROLS.
3. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION & SEDIMENT CONTROLS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE CONTROLS MUST BE STABILIZED.

4. VEHICLES AND EQUIPMENT ARE TO ENTER AND EXIT ONLY AT THE ROCK CONSTRUCTION ENTRANCES, AS SHOWN ON THE PLANS.

5. STOCKPILE HEIGHTS MUST NOT EXCEED 25 FEET. STOCKPILE SLOPES MUST NOT EXCEED 2:1.

6. ANY DISTURBED AREA ON WHICH ACTIVITY HAS CEASED AND WILL REMAIN EXPOSED FOR MORE THAN 72 HOURS MUST BE STABILIZED IMMEDIATELY, DURING NON-GERMINATING PERIODS. MULCH MUST BE APPLIED AT THE RECOMMENDED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL NOT BE RE-DISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH PERMANENT SEEDING SPECIFICATIONS.

7. STRAW MULCH MUST BE APPLIED IN ACCORDANCE WITH PENNDOT 408 SPECIFICATIONS, SECTION 885, LATEST EDITION.

8. SEDIMENT REMOVED FROM BMP'S MUST BE DEPOSITED UP SLOPE OF THE BMP AND GRADED UNIFORMLY INTO THE SITE.

9. EROSION CONTROL MULCH BLANKET IS TO BE APPLIED TO ALL SLOPES 3:1 OR GREATER.

10. THE CONTRACTOR IS RESPONSIBLE FOR THE TRANSPORTATION AND DISPOSAL OF ALL WASTE MATERIAL REMOVED FROM THE PROJECT SITE.

**PRE-EROSION/WORK EROSION MEASURES**

THE EROSION AND SEDIMENT POLLUTION CONTROL MEASURES IDENTIFIED ON THE PLANS WILL BE INSTALLED AND OPERATIONAL PRIOR TO ANY EARTH-MOVING ACTIVITIES.

**UTILITY AND STREAM CROSSINGS**

NO UTILITY OR STREAM CROSSING IS PROPOSED FOR THIS PROJECT. THE PROJECT CONSISTS OF THE RESTORATION OF THE CROWS RUN STREAM (CHAPTER 93 DESIGNATION) MAIN WATER FISHERY (WMPF), AND MODIFICATIONS TO SWAGE RUN.

**GENERAL NOTES**

1. CONSTRUCT PROJECT IN ACCORDANCE WITH THE DRAWINGS, SPECIFICATIONS, AND PENNDOT PUBLICATION 408/2001.
2. VERIFY DIMENSIONS, ELEVATIONS AND LOCATIONS OF FEATURES IN THE FIELD PRIOR TO CONSTRUCTION.
3. ANY SUBSTITUTION OF SHRUBS, TREES AND/OR SEED MIX SPECIES MUST BE APPROVED BY PENNSYLVANIA DEPARTMENT OF TRANSPORTATION DISTRICT 11-9. ONLY NATIVE PLANT SPECIES WILL BE APPROVED.
4. WORK IS TO BE PERFORMED WITHIN THE INDICATED RIGHT OF WAY AND TEMPORARY CONSTRUCTION ENCLOSURES AS STATED IN THE FIELD.
5. THE STREAM CENTERLINE AS SHOWN ON THE DRAWINGS IS TO BE USED FOR CONSTRUCTION OF THE RELOCATED STREAM ONLY. THE ROADWAY BASELINE USED FOR S.R. 2284 RELOCATION HAS BEEN SHOWN FOR ORIENTATION PURPOSES ONLY.
6. ALL LOGS USED FOR STREAM STRUCTURES SHALL BE OF HEMLOCK SPECIES AND HAVE A 12" MINIMUM DIAMETER, UNLESS OTHERWISE SPECIFIED.
7. SEED MIX IS BASED ON PRE-PACKAGE MIX. ANY ALTERNATIVE MIXTURE MAY BE EQUIVALENT AND MUST BE APPROVED BY PENNDOT DIST. 11-9. MULCH MUST BE CLEAN AND KEEF FREE IN STREAM STABILIZATION AREAS.
8. TREES AND SHRUBS MUST BE DELIVERED IN SIZES SPECIFIED. ANY DEVIATIONS MUST BE APPROVED BY PENNDOT DIST. 11-9.
9. REMOVE AND STOCKPILE TOPSOIL FROM THE SITE. SPREAD TOPSOIL BENEATH ON ALL EXCAVATED SLOPES AND NEW STREAM AREAS. TOPSOIL PLACEMENT IS TO BE CLUMPED AND UNCLUMPED.
10. LARGE TREES MAY BE PRESENT IN THE AREAS WHERE EXCAVATION IS PROPOSED. THE CONTRACTOR SHOULD MAKE EVERY EFFORT TO AVOID UNNECESSARY IMPACTS OR REMOVAL OF TREES. EXCAVATION ADJACENT TO A TREE THAT WILL REMAIN IN PLACE SHALL BE LIMITED TO AREAS OUTSIDE THE CRIP LINE OF THE TREE.
11. ANY OFFSITE WASTE/BORROW AREA MUST BE APPROVED BY THE PENNDOT DISTRICT ENVIRONMENTAL UNIT AND BEAVER COUNTY CONSERVATION DISTRICT.
12. AS-BUILT PLANS WILL BE REQUIRED FOR THE STREAM RELOCATIONS AND ELEVATIONS OF THE ROCK CROSS YANES THAT INCLUDE OTHER IN-STREAM STRUCTURES.

DRAWN BY	MAC
CHECKED BY	DPW
DATE	01/06/2016

CROWS RUN STREAM RELOCATION - GENERAL NOTES



DISTRICT	COUNTY	ROUTE	SECTION	SHEET
11-0	BEAVER	200A	808	8 of 39
NEW SEWOLEY TOWNSHIP AND CONWAY BOROUGH				
REVISION NUMBER	REVISIONS	DATE	BY	

**CONSTRUCTION SEQUENCE FOR ALL STREAM RELOCATIONS**

1. NOTIFY THE BEAVER COUNTY CONSERVATION DISTRICT AT (724) 378-1781 AT LEAST SEVEN (7) DAYS PRIOR TO CONSTRUCTION.
2. CONTACT PA-ONE CALL AT LEAST THREE (3) DAYS PRIOR TO THE START OF ANY EARTHMOVING ACTIVITIES.
3. REVIEW THE PLANS AND PROJECT NARRATIVE FOR THE PROPER PROCEDURES FOR THE INSTALLATION AND IMPLEMENTATION OF THESE EAS PLAN BMP'S BEFORE PROCEEDING.

**STREAM RELOCATION AREA #1 (STREAM STA 31+68 TO STREAM STA 43+80)**

1. INSTALL ROCK CONSTRUCTION ENTRANCES AND STAGING AREA, MAINTAINING STONE STOCKPILES AS NECESSARY.
2. INSTALL FILTER SOCK AT ALL LOCATIONS, AS SHOWN ON THE PLANS.
3. PREPARE THE TOPSOIL STOCKPILE AREA AND PLACE ALL REMAINING FILTER SOCK, AS SHOWN ON PLANS.
4. EROSION AND SEDIMENT CONTROL BMP'S MUST BE CONSTRUCTED, STABILIZED AND FUNCTIONAL, BEFORE SITE DISTURBANCE CAN TAKE PLACE WITH THE TRIBUTARY AREAS OF THOSE CONTROLS.
5. CLEAR AND GRUB AS NEEDED, KEEP WOOD FOR TOE-WOOD STRUCTURES, STRIP AND STOCKPILE TOPSOIL IN LOCATIONS SHOWN ON THE PLAN.
6. BEGIN EARTH DISTURBING ACTIVITIES BY EXCAVATING STREAM RELOCATION AREA AT FURTHEST DOWNSTREAM LOCATION NEAR STATION 31+68 AND WORK PROGRESSIVELY UPSTREAM TO STATION 43+80.
7. STOP EXCAVATION TO WITHIN 5' OF UPSTREAM CONNECTION TO EXISTING STREAM.
8. AS CONSTRUCTION PROGRESSES UPSTREAM, INSTALL TOE-WOOD STRUCTURES, CONVERGING ROCK CLUSTERS AND ROCK CROSS VANES IN LOCATIONS AS SHOWN ON THE PLAN DRAWINGS.
9. REPLACE TOPSOIL ON ALL AREAS THAT HAVE REACHED FINAL GRADE.
10. EXCAVATE LAST 5' OF STREAM TO MAKE TIE-IN CONNECTION WITH EXISTING STREAM.
11. BACKFILL EXISTING STREAM, USE STREAM BYPASS PUMPING AS NEEDED.
12. IMMEDIATELY STABILIZE FLOODPLAINS WITH PERMANENT FLOODPLAIN SEED MIX AND CLEAN STRAW MULCH.
13. INSTALL PERMANENT PLANTINGS AND SEED MIXES WHERE INDICATED ON THE PLANTING PLAN AS EARTHWORK IS COMPLETED TO FINAL GRADE. PERMANENTLY SEED AND MULCH ALL DISTURBED AREAS. EROSION CONTROL BLANKETS (ECMB) SHALL BE INSTALLED ON ALL SLOPES 3:1 OR GREATER.

**STREAM RELOCATION AREA #2 (STREAM STA 47+18 TO STREAM STA 62+80)**

1. INSTALL ROCK CONSTRUCTION ENTRANCES AND STAGING AREA, MAINTAINING STONE STOCKPILES AS NECESSARY.
2. INSTALL FILTER SOCK AT ALL LOCATIONS, AS SHOWN ON THE PLANS.
3. PREPARE THE TOPSOIL STOCKPILE AREA AND PLACE ALL REMAINING FILTER SOCK, AS SHOWN ON PLANS.
4. EROSION AND SEDIMENT CONTROL BMP'S MUST BE CONSTRUCTED, STABILIZED AND FUNCTIONAL, BEFORE SITE DISTURBANCE CAN TAKE PLACE WITH THE TRIBUTARY AREAS OF THOSE CONTROLS.
5. CLEAR AND GRUB AS NEEDED, KEEP WOOD FOR TOE-WOOD STRUCTURES, STRIP AND STOCKPILE TOPSOIL IN LOCATIONS SHOWN ON THE PLAN.
6. BEGIN EARTH DISTURBING ACTIVITIES BY EXCAVATING STREAM RELOCATION AREA AT FURTHEST DOWNSTREAM LOCATION NEAR STATION 47+18 AND WORK PROGRESSIVELY UPSTREAM TO STATION 62+80.
7. STOP EXCAVATION TO WITHIN 5' OF UPSTREAM CONNECTION TO EXISTING STREAM.
8. AS CONSTRUCTION PROGRESSES UPSTREAM, INSTALL TOE-WOOD STRUCTURES, CONVERGING ROCK CLUSTERS AND ROCK CROSS VANES IN LOCATIONS AS SHOWN ON THE PLAN DRAWINGS.
9. REPLACE TOPSOIL ON ALL AREAS THAT HAVE REACHED FINAL GRADE.
10. EXCAVATE LAST 5' OF STREAM TO MAKE TIE-IN CONNECTION WITH EXISTING STREAM.
11. BACKFILL EXISTING STREAM, USE STREAM BYPASS PUMPING AS NEEDED.
12. IMMEDIATELY STABILIZE FLOODPLAINS WITH PERMANENT FLOODPLAIN SEED MIX AND CLEAN STRAW MULCH.
13. INSTALL PERMANENT PLANTINGS AND SEED MIXES WHERE INDICATED ON THE PLANTING PLAN AS EARTHWORK IS COMPLETED TO FINAL GRADE. PERMANENTLY SEED AND MULCH ALL DISTURBED AREAS. EROSION CONTROL BLANKETS (ECMB) SHALL BE INSTALLED ON ALL SLOPES 3:1 OR GREATER.

**STREAM RELOCATION AREA #3 (STREAM STA 84+75 TO STREAM STA 79+50)**

1. INSTALL ROCK CONSTRUCTION ENTRANCES AND STAGING AREA, MAINTAINING STONE STOCKPILES AS NECESSARY.
2. INSTALL FILTER SOCK AT ALL LOCATIONS, AS SHOWN ON THE PLANS.
3. PREPARE THE TOPSOIL STOCKPILE AREA AND PLACE ALL REMAINING FILTER SOCK, AS SHOWN ON PLANS.
4. EROSION AND SEDIMENT CONTROL BMP'S MUST BE CONSTRUCTED, STABILIZED AND FUNCTIONAL, BEFORE SITE DISTURBANCE CAN TAKE PLACE WITH THE TRIBUTARY AREAS OF THOSE CONTROLS.
5. CLEAR AND GRUB AS NEEDED, KEEP WOOD FOR TOE-WOOD STRUCTURES, STRIP AND STOCKPILE TOPSOIL IN LOCATIONS SHOWN ON THE PLAN.
6. ONCE ROAD CONSTRUCTION HAS PROGRESSED TO ROAD STATION 84+75 (STREAM STATION 67+75), REALIGN PINE RUN SO IT IS DIRECTED TO THE NEW CULVERT UNDER CROWS RUN ROAD AND THUS INTO THE REALIGNED CROWS RUN STREAM AS SHOWN ON THE PLANS.
7. BEGIN EARTH DISTURBING ACTIVITIES BY EXCAVATING STREAM RELOCATION AREA AT FURTHEST DOWNSTREAM LOCATION NEAR STATION 64+75 AND WORK PROGRESSIVELY UPSTREAM TO STATION 79+50.
8. REMOVE EXISTING ROMIGH ROAD BRIDGE AND CONSTRUCT NEW BRIDGE FOR REALIGNED ROMIGH ROAD. SEE ROAD RELOCATION PLANS PLAN FOR DETAILED SPECIFICATIONS. REALIGN DRAINAGE DITCH TO TIE INTO THE REALIGNED CROWS RUN STREAM AS SHOWN ON THE PLANS.
9. STOP EXCAVATION TO WITHIN 5' OF UPSTREAM CONNECTION TO EXISTING STREAM.
10. AS CONSTRUCTION PROGRESSES UPSTREAM, INSTALL TOE-WOOD STRUCTURES, CONVERGING ROCK CLUSTERS AND ROCK CROSS VANES IN LOCATIONS AS SHOWN ON THE PLAN DRAWINGS.
11. REPLACE TOPSOIL ON ALL AREAS THAT HAVE REACHED FINAL GRADE.
12. EXCAVATE LAST 5' OF STREAM TO MAKE TIE-IN CONNECTION WITH EXISTING STREAM.
13. BACKFILL EXISTING STREAM, USE STREAM BYPASS PUMPING AS NEEDED.
14. IMMEDIATELY STABILIZE FLOODPLAINS WITH PERMANENT FLOODPLAIN SEED MIX AND CLEAN STRAW MULCH.
15. INSTALL PERMANENT PLANTINGS AND SEED MIXES WHERE INDICATED ON THE PLANTING PLAN AS EARTHWORK IS COMPLETED TO FINAL GRADE. PERMANENTLY SEED AND MULCH ALL DISTURBED AREAS. EROSION CONTROL BLANKETS (ECMB) SHALL BE INSTALLED ON ALL SLOPES 3:1 OR GREATER.

**STREAM RELOCATION AREA #4 (STREAM STA 83+10 TO STREAM STA 93+80)**

1. INSTALL ROCK CONSTRUCTION ENTRANCES AND STAGING AREA, MAINTAINING STONE STOCKPILES AS NECESSARY.
2. INSTALL FILTER SOCK AT ALL LOCATIONS, AS SHOWN ON THE PLANS.
3. PREPARE THE TOPSOIL STOCKPILE AREA AND PLACE ALL REMAINING FILTER SOCK, AS SHOWN ON PLANS.
4. EROSION AND SEDIMENT CONTROL BMP'S MUST BE CONSTRUCTED, STABILIZED AND FUNCTIONAL, BEFORE SITE DISTURBANCE CAN TAKE PLACE WITH THE TRIBUTARY AREAS OF THOSE CONTROLS.
5. CLEAR AND GRUB AS NEEDED, KEEP WOOD FOR TOE-WOOD STRUCTURES, STRIP AND STOCKPILE TOPSOIL IN LOCATIONS SHOWN ON THE PLAN.
6. BEGIN EARTH DISTURBING ACTIVITIES BY EXCAVATING STREAM RELOCATION AREA AT FURTHEST DOWNSTREAM LOCATION NEAR STATION 83+10 AND WORK PROGRESSIVELY UPSTREAM TO STATION 93+80.
7. ONCE ROAD CONSTRUCTION HAS PROGRESSED TO ROAD STATION 93+76 (STREAM STATION 91+80) REALIGN SNAKE RUN STREAM TO TIE INTO THE REALIGNED CROWS RUN AS THE BRIDGE IS CONSTRUCTED.
8. STOP EXCAVATION TO WITHIN 5' OF UPSTREAM CONNECTION TO EXISTING STREAM.
9. AS CONSTRUCTION PROGRESSES UPSTREAM, INSTALL TOE-WOOD STRUCTURES, CONVERGING ROCK CLUSTERS AND ROCK CROSS VANES IN LOCATIONS AS SHOWN ON THE PLAN DRAWINGS.
10. REPLACE TOPSOIL ON ALL AREAS THAT HAVE REACHED FINAL GRADE.
11. EXCAVATE LAST 5' OF STREAM TO MAKE TIE-IN CONNECTION WITH EXISTING STREAM.
12. BACKFILL EXISTING STREAM, USE STREAM BYPASS PUMPING AS NEEDED.
13. IMMEDIATELY STABILIZE FLOODPLAINS WITH PERMANENT FLOODPLAIN SEED MIX AND CLEAN STRAW MULCH.
14. INSTALL PERMANENT PLANTINGS AND SEED MIXES WHERE INDICATED ON THE PLANTING PLAN AS EARTHWORK IS COMPLETED TO FINAL GRADE. PERMANENTLY SEED AND MULCH ALL DISTURBED AREAS. EROSION CONTROL BLANKETS (ECMB) SHALL BE INSTALLED ON ALL SLOPES 3:1 OR GREATER.

**SEEDING CHARTS**

**PENNODT FORMULA 'B'**

SPECIES:	PERENNIAL RYEGRASS, CREEPING RED FESCUE, KENTUCKY BLUEGRASS	
	X PURE LIVE SEED:	98%
APPLICATION RATE:	28	29
FERTILIZER TYPE:	10-10-20	
FERTILIZER APPL. RATE:	520-1000 LB./ACRE	
LIMING RATE:	6 T./ACRE	
MULCH TYPE:	HAY OR STRAW	
MULCH RATE:	3.0 T./ACRE	
ANCHOR MATERIAL:	N/A	
ANCHOR MATERIAL APPL.:	N/A	
SEEDING SEASON DATES:	3/15 TO 6/1 AND 8/1 TO 10/15	

**PENNODT FORMULA 'E'**

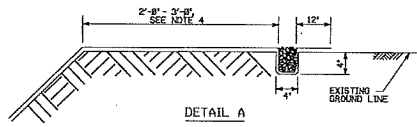
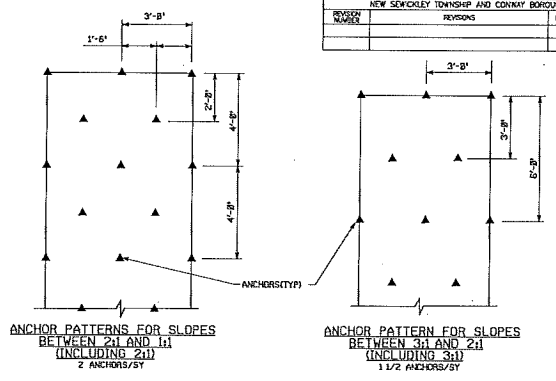
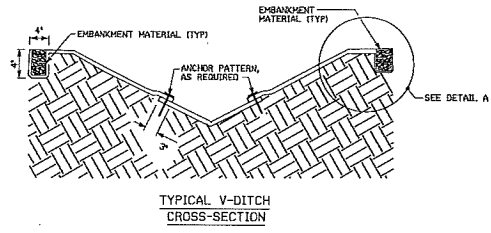
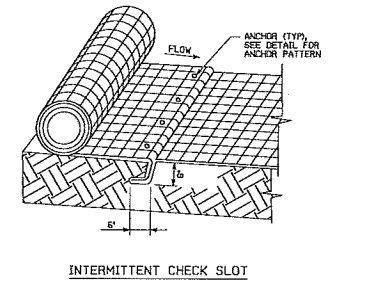
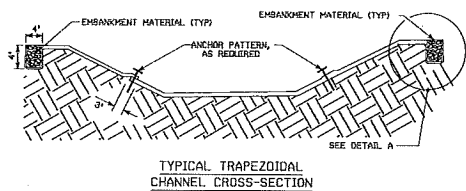
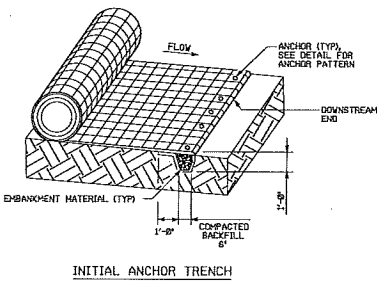
SPECIES:	ANNUAL RYEGRASS	
	X PURE LIVE SEED:	98%
APPLICATION RATE:	48 LB./ACRE	
FERTILIZER TYPE:	10-10-10	
FERTILIZER APPL. RATE:	520 LB./ACRE	
LIMING RATE:	1 T./ACRE	
MULCH TYPE:	HAY OR STRAW	
MULCH RATE:	2.0 T./ACRE	

DRAWN BY	UAC
CHECKED BY	DFW
DATE	01/06/2016

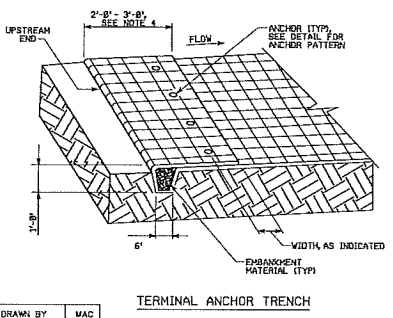
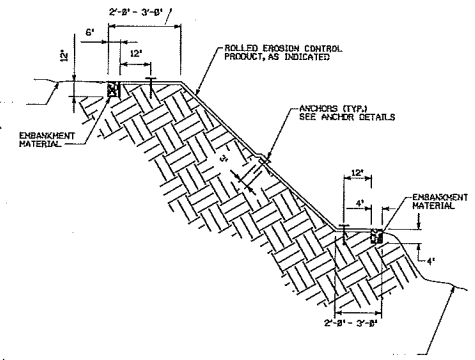
**CROWS RUN STREAM RELOCATION - GENERAL NOTES**



DISTRICT	COUNTY	ROUTE	SECTION	SHEET
11-0	BEAVER	2004	808	6 of 39
NEW SENECOCKEY TOWNSHIP AND CONWAY BOROUGH				
PROJECT NUMBER	REVISIONS			DATE BY



- NOTES**
1. EXCAVATE INITIAL ANCHOR TRENCH 1'-0" DEEP AND 6" WIDE ACROSS THE WIDTH OF THE CHANNEL TO PREVENT UNDERMINING OF THE ROLLED EROSION CONTROL PRODUCTS.
  2. EXCAVATE INTERMITTENT CHECK SLOT 6" DEEP AND 6" WIDE ACROSS THE WIDTH OF THE CHANNEL TO 25'-0" TO 30'-0" ALONG THE LENGTH OF THE ROLLED EROSION CONTROL PRODUCTS TO PREVENT LOOSE SOIL FROM BEING TRANSPORTED DOWNSTREAM BENEATH THE ROLLED EROSION CONTROL PRODUCTS.
  3. EXCAVATE TERMINAL ANCHOR TRENCH 1'-0" DEEP AND 6" WIDE ACROSS THE WIDTH OF THE CHANNEL TO ENSURE WATER FLOW TRANSITIONS SMOOTHLY ONTO THE ROLLED EROSION CONTROL PRODUCTS WITHOUT SEPARATION FROM THE SOIL.
  4. EXTEND ROLLED EROSION CONTROL PRODUCTS 2'-0" - 3'-0" ABOVE THE CREST OF CHANNEL SIDE WHENEVER POSSIBLE.
  5. PLACE ANCHORS IN ACCORDANCE WITH ANCHOR PATTERNS FOR SLOPES AS SHOWN ABOVE.
  6. ESTABLISH AND MAINTAIN CONTINUOUS CONTACT BETWEEN THE ROLLED EROSION CONTROL PRODUCTS AND THE SOIL.
  7. PROVIDE ANCHORED DEVICES IN ACCORDANCE WITH PUBLICATION 488, SECTION 808.21G.



**ROLLED EROSION CONTROL PRODUCTS (RECP)**

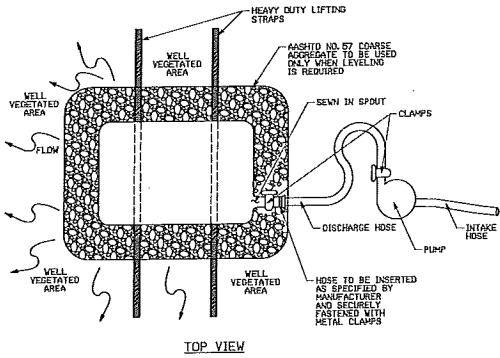
ITEM NO. 4885-8858 MULCH CONTROL NETTING, ORGANIC  
 ITEM NO. 4886-8858 EROSION CONTROL MAT, ORGANIC  
 ITEM NO. 4886-8855 TURF REINFORCEMENT MAT, ORGANIC

DRAWN BY	MAC
CHECKED BY	DFW
DATE	01/06/2016

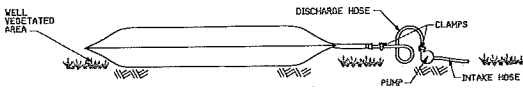
**CROWS RUN STREAM RELOCATION - DETAILS**

PREPARED BY:  
 WALLACE & PANCHER, INC.  
 1053 S. HERITAGE ROAD  
 HERMITAGE, PA 16146

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
11-0	BEAVER	2024	808	7 of 39
NEW SEWICKLEY TOWNSHIP AND CONWAY BOROUGH				
REVISION NUMBER	REVISIONS	DATE	BY	



TOP VIEW

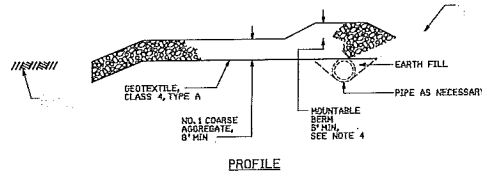


SIDE VIEW

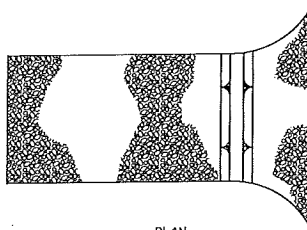
**PUMPED WATER FILTER BAG**  
ITEM NO. 8855-8881

**NOTES**

1. LOCATE BAG IN LEVEL AREAS (LESS THAN 1% GRADE). WHEN LEVEL AREAS ARE NOT AVAILABLE, PLACE AASHTO NO. 57 COARSE AGGREGATE TO LEVEL THE BAG.
2. LOCATE BAG IN A WELL VEGETATED AREA. DISCHARGE ONTO A STABLE, EROSION RESISTANT AREA WHEN VEGETATED AREA IS NOT AVAILABLE, PROVIDE A GEOTEXTILE CLASS 4, TYPE A LINED FLOW PATH TO A STABLE, EROSION RESISTANT RECEIVING WATER COURSE OR A WELL VEGETATED AREA.
3. LOCATE BAG IN AN AREA ACCESSIBLE BY EQUIPMENT FOR MAINTENANCE AND REMOVAL PURPOSES.
4. DO NOT INSERT MORE THAN ONE HOSE INTO A BAG.
5. THE PUMPING RATE SHALL BE NO GREATER THAN 700 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHOULD BE FLOATING AND SCREENED.
6. INSPECT DAILY AND REPLACE THE BAG WHEN 80% OF THE SEDIMENT CAPACITY HAS BEEN FILLED AND/OR WHEN THERE IS A FAILURE. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED. ADDITIONAL BAGS WILL BE PAID FOR EACH.
7. REMOVE AND PROPERLY DISPOSE OF THE PUMPED WATER FILTER BAGS. RESTORE THE AREA IN ACCORDANCE WITH THE SPECIFICATIONS IN PUBLICATION 488. DO NOT CUT FILTER BAG OR DISTRIBUTE AND SEED SEDIMENT.
8. DO NOT PERMIT DISCHARGE FROM THE BAG TO DRAIN BACK INTO WORK OR ACCESS AREAS OF THE PROJECT.



PROFILE



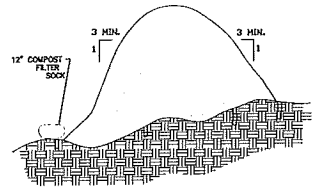
PLAN

**ROCK CONSTRUCTION ENTRANCE**

ITEM NO. 8849-8881

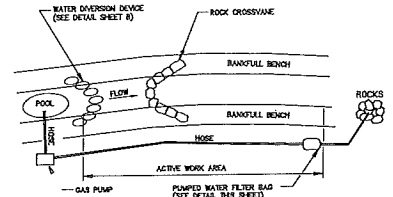
**NOTES**

1. INSPECT THE ENTRANCE DAILY. REMOVE ALL SEDIMENT DEPOSITED ON THE PUBLIC ROADWAYS AND RETURN TO THE CONSTRUCTION SITE. WASHING OF THE ROADWAY WILL NOT BE PERMITTED.
2. MAINTAIN THE SPECIFIED ROCK CONSTRUCTION ENTRANCE THICKNESS. PLACE ADDITIONAL ROCK WHENEVER ROCK BECOMES CLOGGED WITH SEDIMENT.
3. MAINTAIN STOCKPILE OF AASHTO NO. 1 COARSE AGGREGATE.
4. CONSTRUCT A MOUNTABLE BERM ONLY WHEN 8' MIN COVER CANNOT BE PROVIDED OVER THE PUMP.
5. SATISFACTORILY REMOVE MATERIALS AS PER SPECIFICATION IN SECTION 849 WHEN ROCK CONSTRUCTION ENTRANCE IS NO LONGER NEEDED.
6. PROVIDE GEOTEXTILE MATERIAL MEETING THE REQUIREMENTS OF PUBLICATION 488 SECTION 238. FURNISH AND INSTALL IN ACCORDANCE WITH SECTION 212. PROVIDE GEOTEXTILE ALONG ALL INTERFACE AREAS WITH GROUND CONTACT.
7. CONSTRUCT ROCK CONSTRUCTION ENTRANCE WITHIN THE RIGHT-OF-WAY OR EASEMENT AREAS. ENTRANCE MAY BE CONSTRUCTED ON A SLOPE IF ADEQUATE FULL CUT RIGHT DISTANCE IS AVAILABLE.



**NOTES**

1. STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET.
  2. STOCKPILE SLOPES MUST BE 3:1 OR FLATTER.
- SEE ALSO "GENERAL NOTES" SECTION
- TEMPORARY TOPSOIL STOCKPILE**  
ITEM NO. 8881-8881



**NOTES:**

1. ALL WORK WILL BE DONE DURING LOW FLOW CONDITIONS.
2. PUMP INTAKE SHALL BE MAINTAINED A SUFFICIENT DISTANCE FROM BOTTOM TO PREVENT SEDIMENT FROM ENTERING THE SYSTEM.
3. DO NOT EXCAVATE A SUMP AREA WITHIN THE STREAM CHANNEL FOR THE PUMP INTAKE.
4. STREAM BYPASS/DIVERSION WILL BE MOVED AS THE WORK PROGRESSES. LOCATIONS FOR PUMP PLACEMENT WILL BE DETERMINED DURING CONSTRUCTION.
5. MOVING OF THE PUMP UPSTREAM DIKE, AND DOWNSTREAM ROCK FILTER SHOULD BE MINIMIZED TO THE GREATEST EXTENT POSSIBLE.

**STREAM BYPASS DETAIL**

ITEM NO. 9888-8409

DRAWN BY	MAC
CHECKED BY	DPW
DATE	01/06/2016

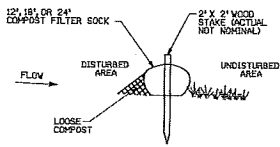
**CROWS RUN STREAM RELOCATION -- DETAILS**

PREPARED BY:  
WALLACE & PANCHER, INC.  
1035 S. HERITAGE ROAD  
HERITAGE, PA 16148

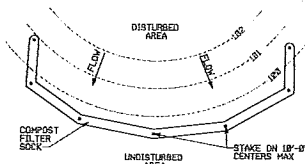


DISTRICT	COUNTY	ROUTE	SECTION	SHEET
11-0	BEAVER	2004	BOE	8 of 39
NEW SEMICOLEY TOWNSHIP AND CONWAY BOROUGH				
DESIGN	REVISIONS	DATE	BY	

- NOTES**
1. REMOVE DEPOSITS WHEN SEDIMENT ACCUMULATION IS ONE THIRD OF THE EXPOSED COMPOST FILTER SOCK.
  2. PLACE COMPOST FILTER SOCK ON LEVEL GRADE. EXTEND BOTH ENDS OF THE COMPOST FILTER SOCK AT LEAST 8'-0" UPSLOPE AT 45 DEGREES TO THE HADN ALIGNMENT.
  3. REPLACE BIODEGRADABLE FILTER SOCK AFTER 6 MONTHS; PHOTOGRAPHABLE AFTER 12 MONTHS.

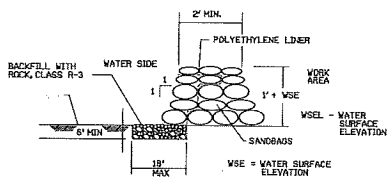


SECTION VIEW

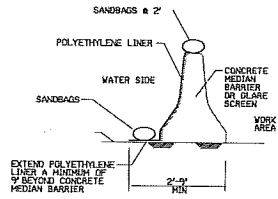


PLAN VIEW

**COMPOST FILTER SOCK**  
ITEM NO. 8867-8812 12" DIAMETER  
ITEM NO. 8867-8819 18" DIAMETER



DETAIL  
USING SANDBAGS AS WATER DIVERSION DEVICE



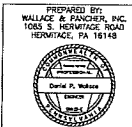
DETAIL  
USING CONCRETE MEDIAN BARRIER OR CLARE SCREEN AS WATER DIVERSION DEVICE

**WATER DIVERSION DEVICE**

- NOTES:**
1. HEIGHT AND THICKNESS OF DIVERSION IS DEPENDENT ON STREAM FLOW AND SELECTED BY THE CONTRACTOR.
  2. ALL MATERIALS USED TO BE CLEAN AND NON-POLLUTING.

DRAWN BY	MAC
CHECKED BY	DPW
DATE	07/06/2016

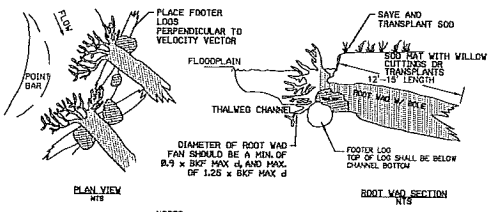
CROWS RUN STREAM RELOCATION – DETAILS







DISTRICT	COUNTY	ROUTE	SECTION	SHEET
11-0	SEAFER	2004	800	10 of 39
NEW SEAKOLEY TOWNSHIP AND CONWAY RESERVOIR				
REVISION	DATE	BY		

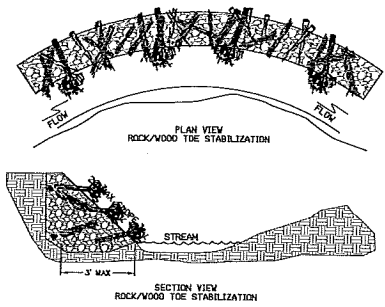


DIAMETER OF ROOT WAD-FAN SHOULD BE A MAX. OF 8.9 x BKF MAX d, AND MAX. OF 1.25 x BKF MAX d

FOOTER LOG TOP OF LOG SHALL BE BELOW CHANNEL BOTTOM

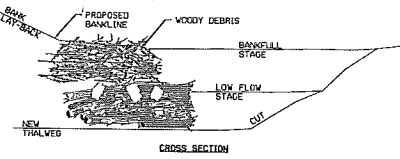
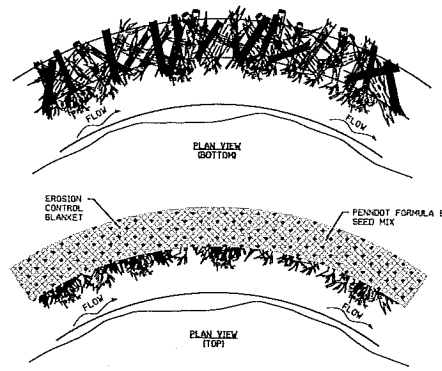
NOTES:  
 1. TREES SHOULD BE 12'-18\"/>

**ROOT WAD DETAIL**  
ITEM NO. 9000-8482



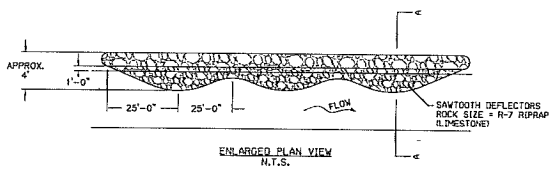
NOTES:  
 1. LOGS SHOULD NOT BE PARALLEL TO STREAM FLOW.  
 2. CARRY THE WOOD UPSTREAM OF CURVE FC AND DOWNSTREAM OF P1.  
 3. ROCK SHALL BE OF SIZE R-5 MINIMUM.  
 4. USE R-5 RIP RAP INTERMIXED WITH TOEWOOD MATERIAL.

**COMBINED TOEWOOD/ROCK BANK STRUCTURE**  
ITEM NO. 9020-8482

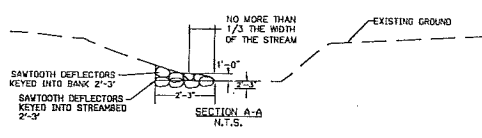


NOTES:  
 1. USE CLEARED & CRUBBED TREE MATERIAL TO BUILD TOEWOOD STRUCTURE.  
 2. WOOD IS SUBMERGED AND COUNTER-WEIGHTED WITH R-7 ROCK SO THAT BOX OF WOOD IS COVERED AND INTEGRATED WITH BANK.  
 3. LOGS SHOULD NOT BE PARALLEL TO STREAM FLOW.

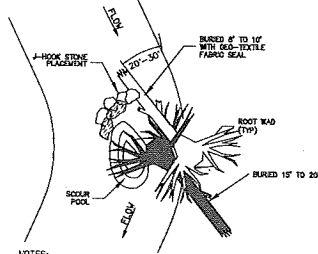
**TOEWOOD STRUCTURE**  
ITEM NO. 9020-8481



**ENLARGED PLAN VIEW**  
N.T.S.



**SAWTOOTH DEFLECTOR**  
ITEM NO. 9020-8483



NOTES:  
 1. R-7 ROCK SHOULD BE USED FOR THE J-HOOK STONE PLACEMENT.  
 2. FOOTER ROCKS SHOULD BE PLACED AT INVERT OF NEW STREAM BED. TOP ROCKS SHOULD HAVE A MAX 6\"/>

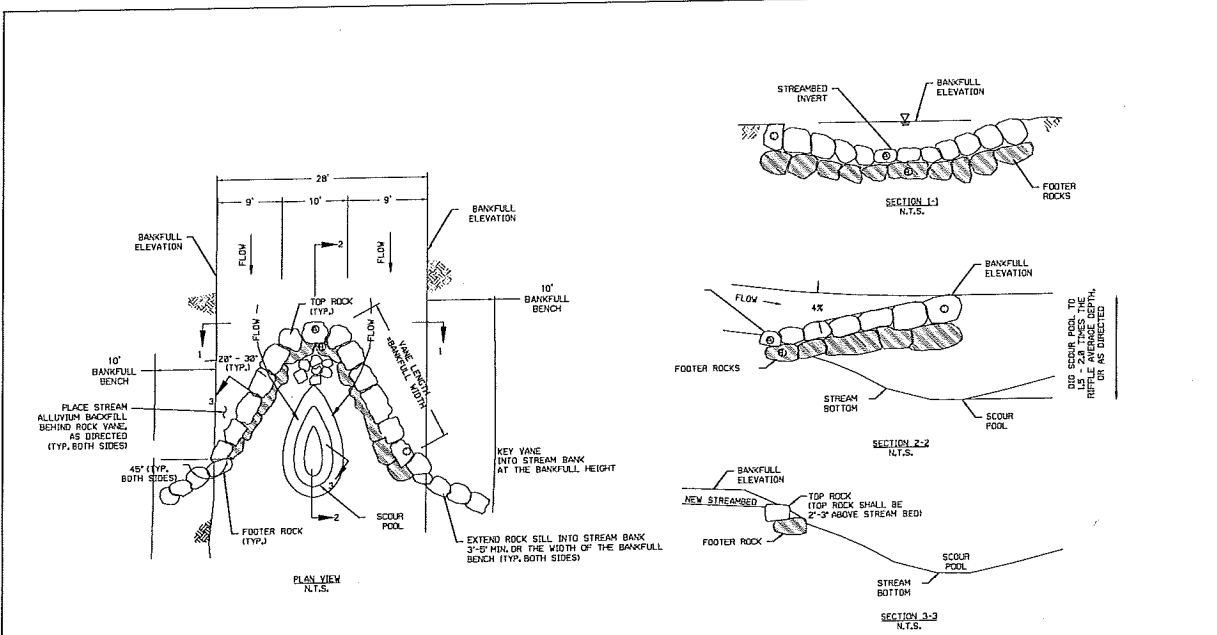
**ROOTWAD/LOG VANE/J-HOOK STRUCTURE**  
ITEM NO. 9020-8486

DRAWN BY	MAC
CHECKED BY	DPW
DATE	01/06/2016

**CROWS RUN STREAM RELOCATION -- DETAILS**

PREPARED BY:  
 WALLACE & PANGBORN, INC.  
 1001 S. HERMITAGE ROAD  
 HENRIEVILLE, PA 16148

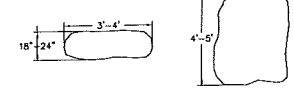
DISTRICT	COUNTY	ROUTE	SECTION	Sheet
11-0	BEAVER	2004	ROB	11 of 33
NEW SEDWICKLEY TOWNSHIP AND CONWAY BOROUGH				
DESIGN NUMBER	REVISION	DATE	BY	



ROCK CROSS VANE STRUCTURE LOCATIONS		
STRUCTURE NUMBER	STATION	ELEVATION OF #
ROCK CROSS VANE #1	38+05	718.32
ROCK CROSS VANE #2	38+18	722.68
ROCK CROSS VANE #3	38+35	724.29
ROCK CROSS VANE #4	48+58	728.27
ROCK CROSS VANE #5	41+55	727.32
ROCK CROSS VANE #6	42+78	723.88
ROCK CROSS VANE #7	47+58	732.51
ROCK CROSS VANE #8	52+58	728.82
ROCK CROSS VANE #9	54+58	741.25
ROCK CROSS VANE #10	54+38	741.87
ROCK CROSS VANE #11	65+68	732.52
ROCK CROSS VANE #12	66+58	753.88
ROCK CROSS VANE #13	68+18	754.88
ROCK CROSS VANE #14	71+35	758.12
ROCK CROSS VANE #15	73+88	757.45
ROCK CROSS VANE #16	75+88	753.15
ROCK CROSS VANE #17	76+15	758.15
ROCK CROSS VANE #18	76+58 LEFT	753.88
ROCK CROSS VANE #19	78+88	753.52
ROCK CROSS VANE #20	79+88	755.37
ROCK CROSS VANE #21	83+58	778.33
ROCK CROSS VANE #22	85+58	771.78
ROCK CROSS VANE #23	85+75	774.58
ROCK CROSS VANE #24	92+58	773.88

\* CROSS VANE #18 IS USED IN HELPING TIE IN THE ROUGH ROAD DRAINAGE DITCH

- NOTES**
1. USE BOULDERS TO CONSTRUCT ROCK CROSS VANES.
  2. TOP ROCKS AND FOOTER ROCKS SHALL BE RECTANGULAR BLOCKS OR OTHER BLOCKY ROCK WITH MINIMUM AXIAL DIMENSION SHOWN IN TYPICAL BOULDER DETAIL. SHOULD THESE NOT BE AVAILABLE, ROCK MAY CONSIST OF BLOCKY MATERIAL FROM R-7 RIP-RAP SO THAT NO INDIVIDUAL ROCKS WILL BE SMALLER THAN 38 INCHES IN ANY DIMENSION. CIRCULAR ROCKS SHALL HAVE A MINIMUM DIAMETER OF 38 INCHES.
  3. FOOTER ROCKS - USE LARGER ROCKS CLOSER TO STREAM BANK AND SMALLER ROCKS CLOSER TO CROSS VANE INVERT.
  4. PLACE TOP ROCKS IN BRICK PATTERN TO AVOID MATCHING SEAMS.
  5. PLACE STREAMBED MATERIAL TO FILL VOIDS IN THE CROSS VANE AND TO LEVEL THE SURFACE BEHIND THE STRUCTURE.
  6. ALL ROCKS SHOULD TOUCH ADJACENT ROCKS TO FORM A TIGHT FIT.
  7. THE TOP OF THE UPSTREAM-MOST VANE ROCKS SHALL BE PLACED 2'-3" ABOVE THE STREAM BED.
  8. IN PLAN VIEW, POSITION TOP ROCKS SO THAT AT LEAST 3/4 OF THE FOOTER ROCK IS COVERED.
  9. PLACE FOOTER ROCKS SUCH THAT MINIMAL GAPS ARE FORMED BETWEEN THE ROCKS.



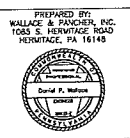
- NOTES**
1. ALL BOULDERS SHALL BE SANDSTONE.
  2. BOULDER SIZE TYPICALLY VARY WITH EACH TRUCK LOAD. USE LARGEST BOULDERS FOR CROSS VANES AND SMALLER ROCKS TO FILL GAPS (CHIPPING) AND FOR BACKFILL BEHIND VANE ARMS.
  3. BOULDER SIZES ARE APPROXIMATE AND MAY BE LARGER AND/OR SMALLER THAN SHOWN, BUT SHOULD BE CLOSE TO WHAT IS SPECIFIED.

ROCK CROSS VANE  
ITEM NO. 9000-8484

TYPICAL BOULDER SIZE DETAIL

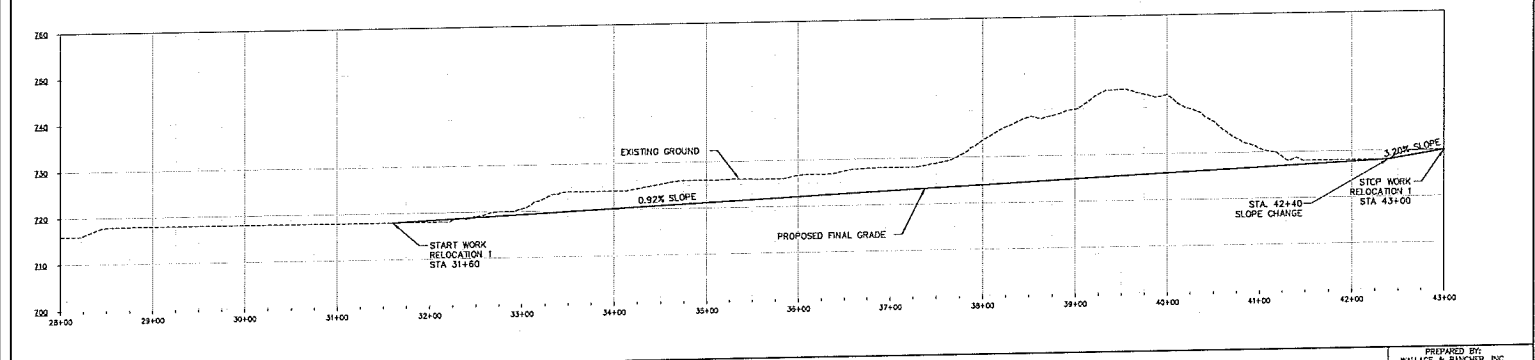
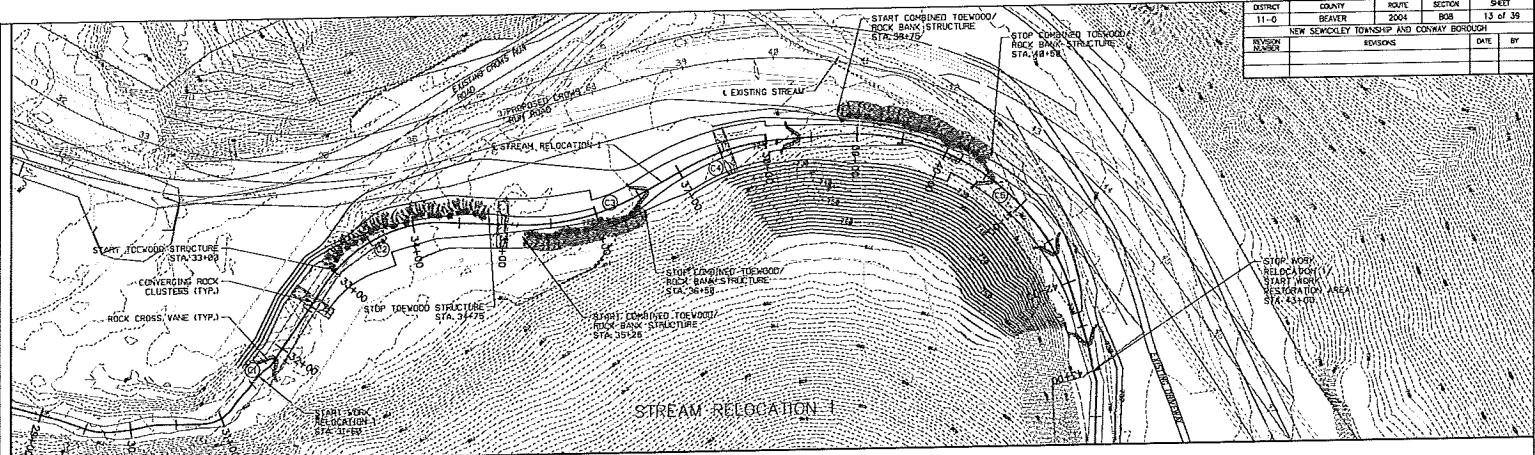
DRAWN BY	MAC
CHECKED BY	DFW
DATE	01/06/2016

CROWS RUN STREAM RELOCATION - DETAILS





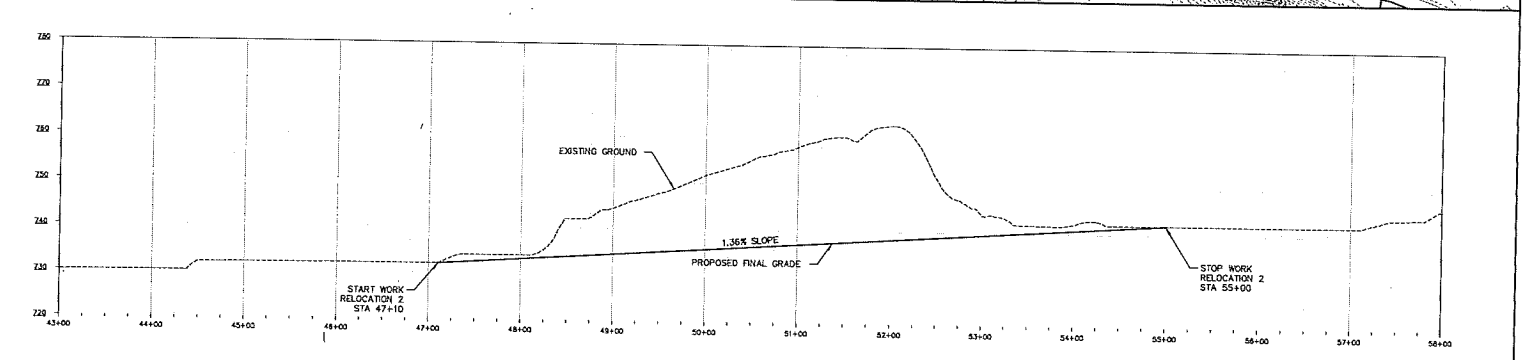
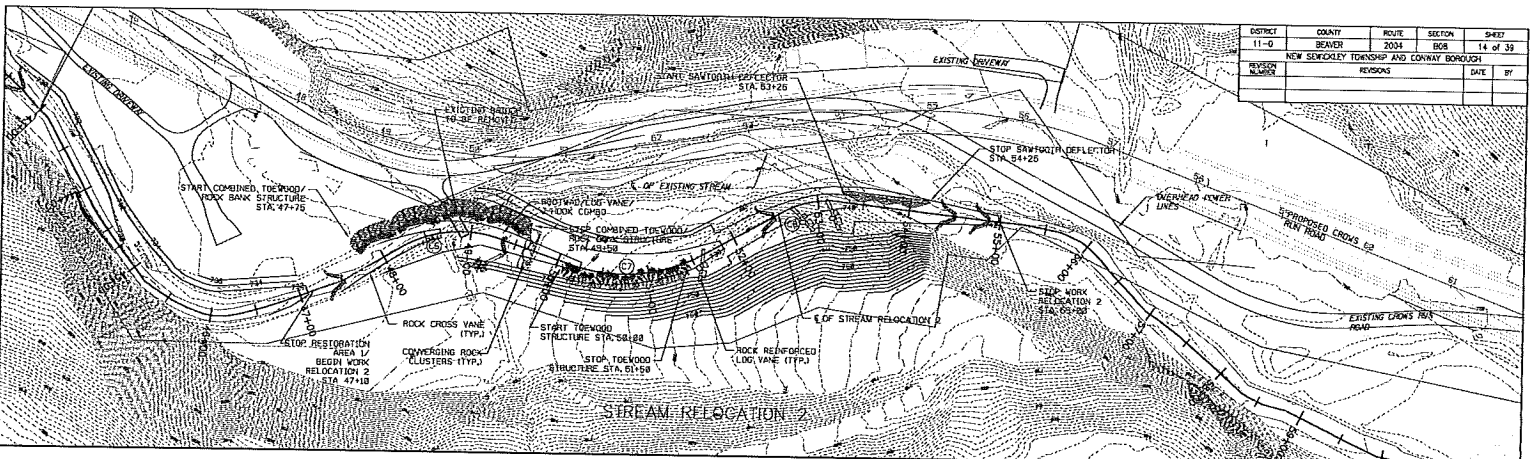
DISTRICT	COUNTY	ROUTE	SECTION	SHEET
11-0	BEAVER	2004	B08	13 of 39
NEW SENECOLEY TOWNSHIP AND CONWAY BOROUGH				
DIVISION	NO.	DATE	BY	



<table border="1"> <tr><td>DRAWN BY</td><td>MAC</td></tr> <tr><td>CHECKED BY</td><td>DPW</td></tr> <tr><td>DATE</td><td>01/06/2016</td></tr> </table>	DRAWN BY	MAC	CHECKED BY	DPW	DATE	01/06/2016	<ul style="list-style-type: none"> <li>— 750 — EXISTING MAJOR CONTOUR</li> <li>— 700 — EXISTING MINOR CONTOUR</li> <li>— 775 — PROPOSED MAJOR CONTOUR</li> <li>— 725 — PROPOSED MINOR CONTOUR</li> <li>— CL — EXISTING STREAM</li> <li>— CL — STREAM RESTORATION</li> <li>— — PROPERTY LINE</li> <li>— — RIGHT OF WAY</li> <li>— — EXISTING ROAD</li> <li>— — PROPOSED ROAD</li> <li>— — LIMITS OF DISTURBANCE</li> </ul>	<ul style="list-style-type: none"> <li> ROCK CROSS VANE</li> <li> SAWTOOTH DEFLECTOR</li> <li> ROCK REINFORCED LOG VANE</li> <li> COMBINED TOEWOOD/ROCK BANK STRUCTURE</li> </ul>	<ul style="list-style-type: none"> <li> TOEWOOD STRUCTURE</li> <li> ROOTWAD/LOG VANE/J-HOOK COMBO</li> <li> CONVERGING ROCK CLUSTERS</li> <li> STREAM BANK STABILIZATION</li> <li> CURVE NUMBER</li> </ul>	<p>SCALE: 1" = 50'</p> <p>SCALE: 1" = 10'</p>	<p>PREPARED BY: WALLACE &amp; PANICHER, INC. 1085 S. HERITAGE ROAD HERMITAGE, PA 16148</p>
DRAWN BY	MAC										
CHECKED BY	DPW										
DATE	01/06/2016										

CROWS RUN STREAM RELOCATION – PLAN & PROFILE

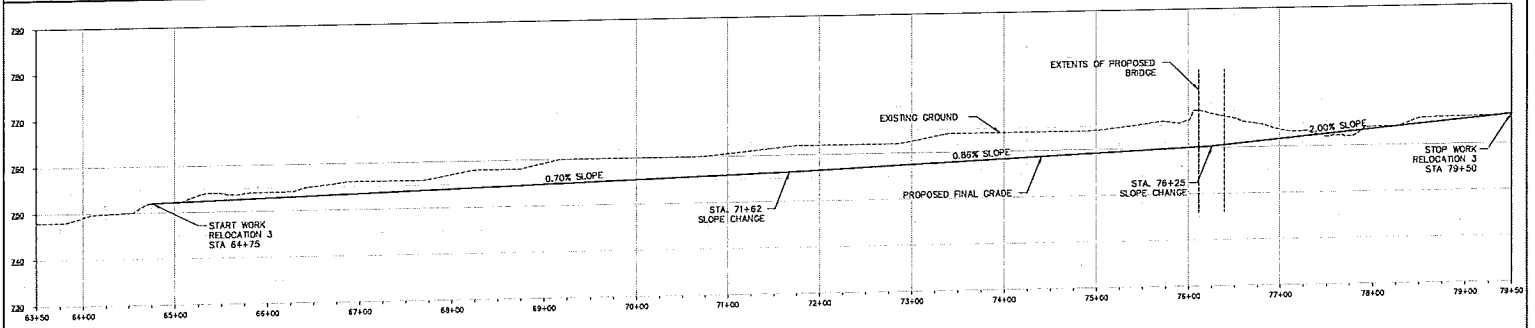
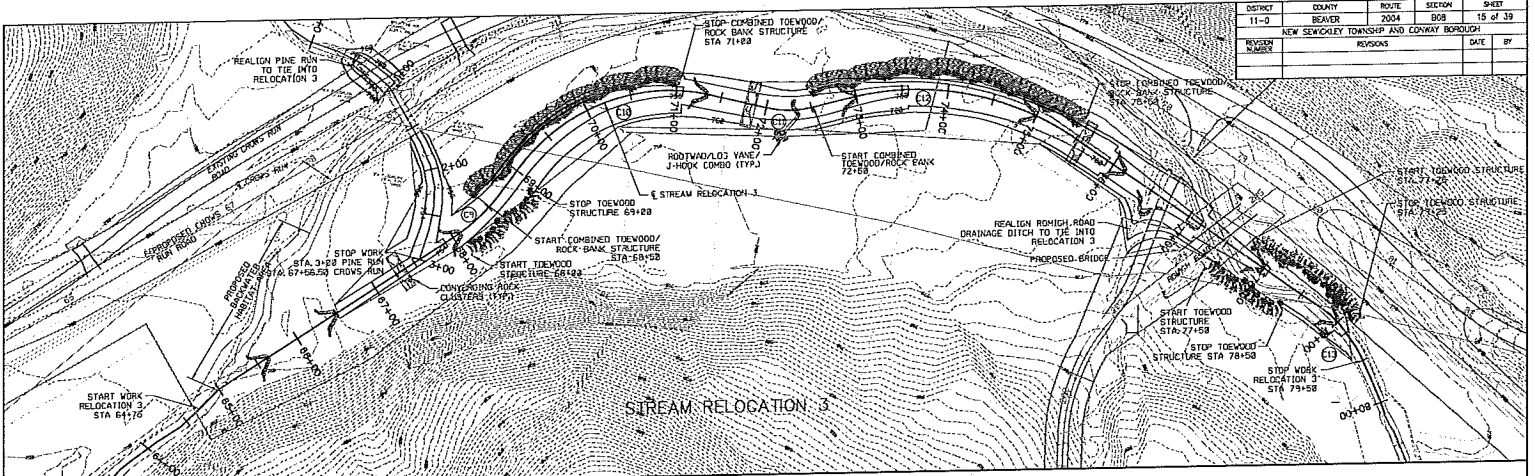
DISTRICT	COUNTY	ROUTE	SECTION	SHEET
11-D	BEAVER	2004	608	14 of 39
NEW SENECOLEY TOWNSHIP AND CONWAY BOROUGH				
REVISION	DATE	BY		



<table border="1"> <tr><td>DRAWN BY</td><td>MAC</td></tr> <tr><td>CHECKED BY</td><td>DAK</td></tr> <tr><td>DATE</td><td>01/06/2016</td></tr> </table>	DRAWN BY	MAC	CHECKED BY	DAK	DATE	01/06/2016	<ul style="list-style-type: none"> <li>--- 75' --- EXISTING MAJOR CONTOUR</li> <li>--- 10' --- EXISTING MINOR CONTOUR</li> <li>--- 2' --- PROPOSED MAJOR CONTOUR</li> <li>--- 2' --- PROPOSED MINOR CONTOUR</li> <li>--- CL --- EXISTING STREAM</li> <li>--- CL --- STREAM RESTORATION</li> <li>--- --- PROPERTY LINE</li> <li>--- --- RIGHT OF WAY</li> <li>--- --- EXISTING ROAD</li> <li>--- --- PROPOSED ROAD</li> <li>--- --- LIMITS OF DISTURBANCE</li> </ul>	<ul style="list-style-type: none"> <li> ROCK CROSS VANE</li> <li> SAWTOOTH DEFLECTOR</li> <li> ROCK REINFORCED LOG VANE</li> <li> COMBINED TOEWOOD/ROCK BANK STRUCTURE</li> <li> TOEWOOD STRUCTURE</li> <li> ROOTWAD/LOG VANE/J-HOOK COURSE</li> <li> CONVERGING ROCK CLUSTERS</li> <li> STREAM BANK STABILIZATION</li> <li> CURVE NUMBER</li> </ul>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>PLAN SCALE: 1" = 50'</p> </div> <div style="text-align: center;"> <p>PROFILE VERTICAL SCALE: 1" = 10'</p> </div> </div>	<p>PREPARED BY: WALLACE &amp; PANCHER, INC. 1063 S. HERMITAGE ROAD HERMITAGE, PA 16149</p>
DRAWN BY	MAC									
CHECKED BY	DAK									
DATE	01/06/2016									

**CROWS RUN STREAM RELOCATION - PLAN & PROFILE**

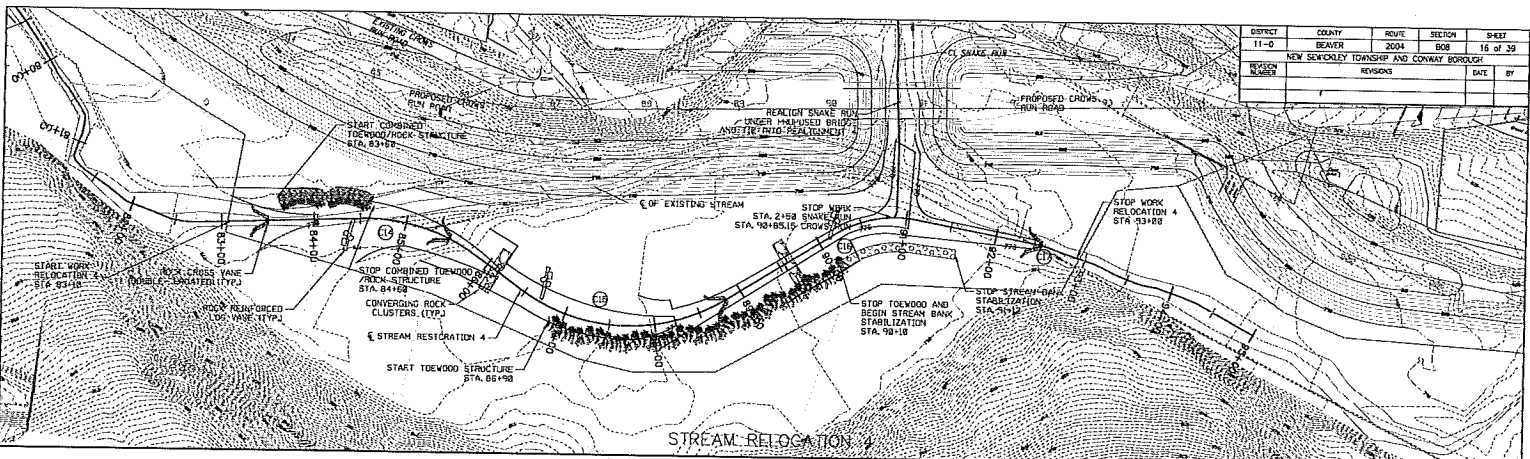
DISTRICT	COUNTY	ROUTE	SECTION	SHEET
11-0	BEAVER	2004	008	15 of 39
NEW SEWICOLEY TOWNSHIP AND CONWAY BOROUGH				
REVISION NUMBER	REVISIONS	DATE	BY	



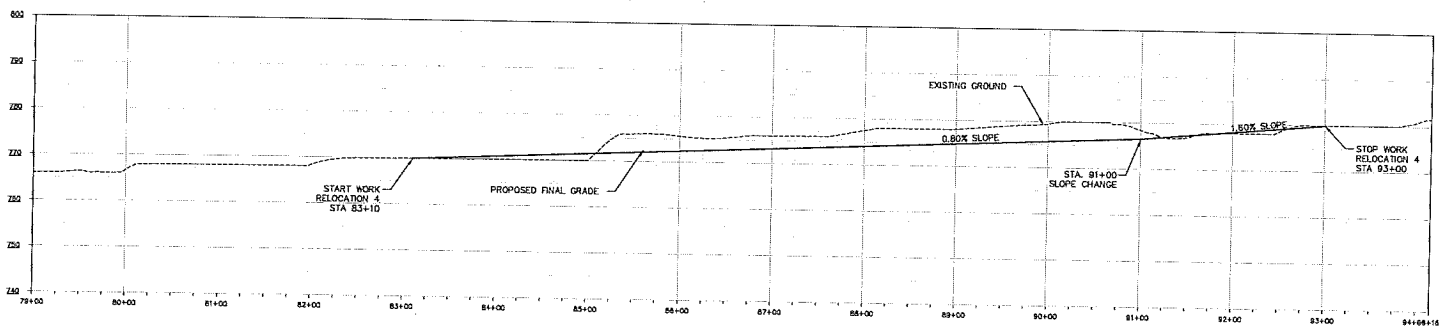
<table border="1"> <tr> <td>DRAWN BY</td> <td>WAC</td> </tr> <tr> <td>CHECKED BY</td> <td>DFW</td> </tr> <tr> <td>DATE</td> <td>01/06/2016</td> </tr> </table>	DRAWN BY	WAC	CHECKED BY	DFW	DATE	01/06/2016	<ul style="list-style-type: none"> <li>— 750 — EXISTING MAJOR CONTOUR</li> <li>— 700 — EXISTING MINOR CONTOUR</li> <li>— 700 — PROPOSED MAJOR CONTOUR</li> <li>— 700 — PROPOSED MINOR CONTOUR</li> <li>— CL — CL EXISTING STREAM</li> <li>— CL — CL STREAM RESTORATION</li> <li>— — PROPERTY LINE</li> <li>— — RIGHT OF WAY</li> <li>— — EXISTING ROAD</li> <li>— — PROPOSED ROAD</li> <li>— — LIMITS OF DISTURBANCE</li> </ul>	<ul style="list-style-type: none"> <li> ROCK CROSS VANE</li> <li> SAWTOOTH DEFLECTOR</li> <li> ROCK REINFORCED LOG VANE</li> <li> COMBINED TOEWOOD/ROCK BANK STRUCTURE</li> <li> TOEWOOD STRUCTURE</li> <li> ROOTWAD/LOG VANE/J-HOOK COMBO</li> <li> CONVERGING ROCK CLUSTERS</li> <li> STREAM BANK STABILIZATION</li> <li> CURVE NUMBER</li> </ul>	<p>EXTENTS OF PROPOSED BRIDGE</p> <p>EXISTING GROUND</p> <p>PROPOSED FINAL GRADE</p> <p>STA 71+62 SLOPE CHANGE</p> <p>STA 76+25 SLOPE CHANGE</p> <p>STOP WORK RELOCATION 3 STA 79+50</p> <p>0.70% SLOPE</p> <p>0.86% SLOPE</p> <p>2.00% SLOPE</p>	<p>PLAN SCALE: 1" = 50'</p> <p>PROFILE VERTICAL SCALE: 1" = 10'</p>	<p>PREPARED BY: WALLACE &amp; PANCHER, INC. 1065 S. HERITAGE ROAD HERITAGE, PA 16148</p>
DRAWN BY	WAC										
CHECKED BY	DFW										
DATE	01/06/2016										

CROWS RUN STREAM RELOCATION - PLAN & PROFILE

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
11-D	BEAVER	2004	BOB	16 of 39
REVISION NUMBER	REVISIONS	DATE	BY	



STREAM RELOCATION

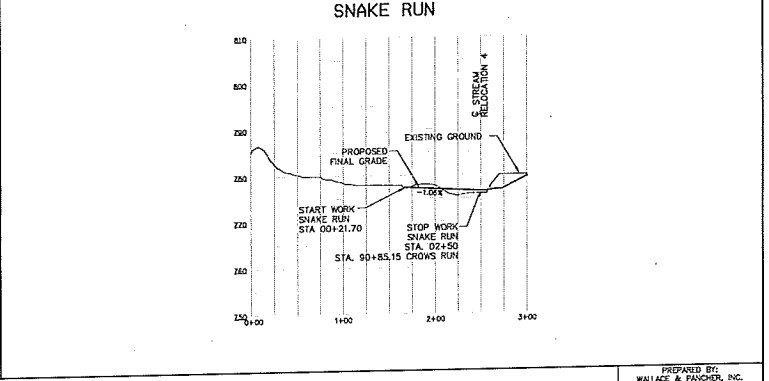
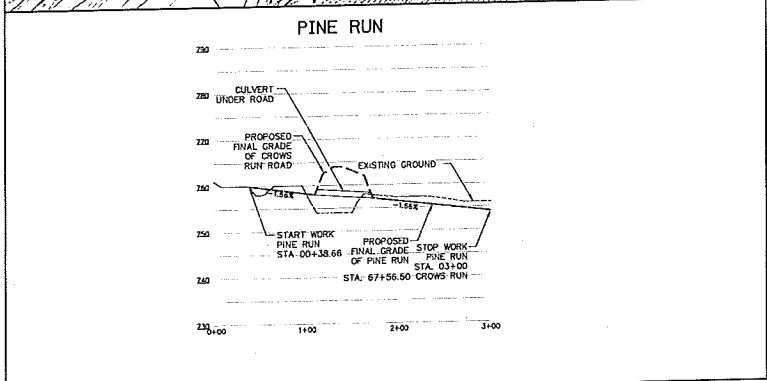
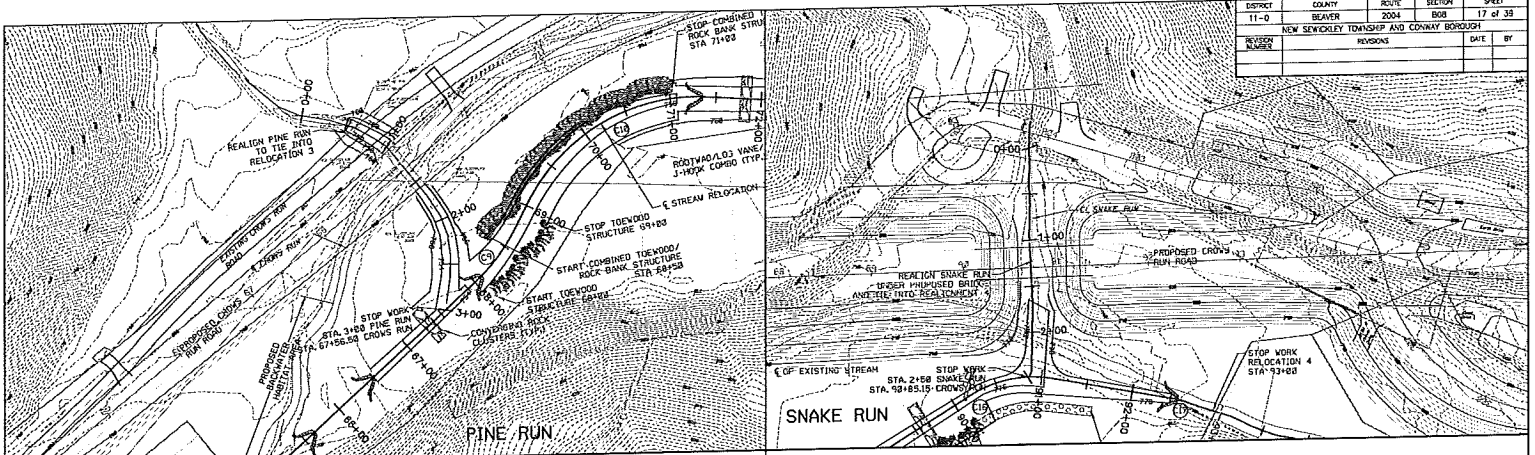


<table border="1"> <tr><td>DRAWN BY</td><td>MAC</td></tr> <tr><td>CHECKED BY</td><td>DPW</td></tr> <tr><td>DATE</td><td>01/06/2019</td></tr> </table>	DRAWN BY	MAC	CHECKED BY	DPW	DATE	01/06/2019	<ul style="list-style-type: none"> <li>— 750 — EXISTING MAJOR CONTOUR</li> <li>— 700 — EXISTING MINOR CONTOUR</li> <li>— — PROPOSED MAJOR CONTOUR</li> <li>— — PROPOSED MINOR CONTOUR</li> <li>— — CL EXISTING STREAM</li> <li>— — CL STREAM RESTORATION</li> <li>— — PROPERTY LINE</li> <li>— — RIGHT OF WAY</li> <li>— — EXISTING ROAD</li> <li>— — PROPOSED ROAD</li> <li>— — LIMITS OF DISTURBANCE</li> </ul>	<ul style="list-style-type: none"> <li> ROCK CROSS VANE</li> <li> SAWTOOTH DEFLECTOR</li> <li> ROCK REINFORCED LOG VANE</li> <li> COMBINED TOEWOOD/ROCK BANK STRUCTURE</li> <li> TOEWOOD STRUCTURE</li> <li> ROOTWAD/LOG VANE/J-HOOK COMBO</li> <li> CONVERGING ROCK CLUSTERS</li> <li> STREAM BANK STABILIZATION</li> <li> CURVE NUMBER</li> </ul>	<p>PREPARED BY: WALLACE &amp; PANCHER, INC. 1080 S. HERMITAGE ROAD HERMITAGE, PA 16145</p>
DRAWN BY	MAC								
CHECKED BY	DPW								
DATE	01/06/2019								

CROWS RUN STREAM RELOCATION -- PLAN & PROFILE



PROJECT	COUNTY	ROUTE	SECTION	SHEET
11-0	BEAVER	2004	808	17 of 39
REVISION NUMBER	REVISIONS	DATE	BY	



<table border="1"> <tr> <td>DRAWN BY</td> <td>TEV</td> </tr> <tr> <td>CHECKED BY</td> <td>DFW</td> </tr> <tr> <td>DATE</td> <td>03/09/2016</td> </tr> </table>	DRAWN BY	TEV	CHECKED BY	DFW	DATE	03/09/2016	<table border="0"> <tr> <td></td> <td>EXISTING MAJOR CONTOUR</td> <td></td> <td>ROCK CROSS VANE</td> <td></td> <td>TOEWOOD STRUCTURE</td> <td rowspan="2">             PLAN SCALE: 1" = 50'         </td> </tr> <tr> <td></td> <td>EXISTING MINOR CONTOUR</td> <td></td> <td>SAWTOOTH DEFLECTOR</td> <td></td> <td>ROOTWAD/LOG VANE/ J-HOOK COMBO</td> <td rowspan="2">             PROFILE VERTICAL SCALE: 1" = 10'         </td> </tr> <tr> <td></td> <td>PROPOSED MAJOR CONTOUR</td> <td></td> <td>ROCK REINFORCED LOG VANE</td> <td></td> <td>CONVERGING ROCK CLUSTERS</td> <td rowspan="2">             PREPARED BY:            WALLACE &amp; FANCHER, INC.            1055 S. HERMITAGE ROAD            HERMITAGE, PA 16146         </td> </tr> <tr> <td></td> <td>PROPOSED MINOR CONTOUR</td> <td></td> <td>COMBINED TOEWOOD/ROCK BANK STRUCTURE</td> <td></td> <td>STREAM BANK STABILIZATION</td> <td rowspan="2"> <b>PINE RUN &amp; SNAKE RUN - PLAN &amp; PROFILE</b> </td> </tr> <tr> <td></td> <td>CL EXISTING STREAM</td> <td></td> <td></td> <td></td> <td>CURVE NUMBER</td> <td></td> </tr> <tr> <td></td> <td>CL STREAM RESTORATION</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>PROPERTY LINE</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>RIGHT OF WAY</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>EXISTING ROAD</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>PROPOSED ROAD</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>LIMITS OF DISTURBANCE</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		EXISTING MAJOR CONTOUR		ROCK CROSS VANE		TOEWOOD STRUCTURE	 PLAN SCALE: 1" = 50'		EXISTING MINOR CONTOUR		SAWTOOTH DEFLECTOR		ROOTWAD/LOG VANE/ J-HOOK COMBO	 PROFILE VERTICAL SCALE: 1" = 10'		PROPOSED MAJOR CONTOUR		ROCK REINFORCED LOG VANE		CONVERGING ROCK CLUSTERS	 PREPARED BY: WALLACE & FANCHER, INC. 1055 S. HERMITAGE ROAD HERMITAGE, PA 16146		PROPOSED MINOR CONTOUR		COMBINED TOEWOOD/ROCK BANK STRUCTURE		STREAM BANK STABILIZATION	<b>PINE RUN &amp; SNAKE RUN - PLAN &amp; PROFILE</b>		CL EXISTING STREAM				CURVE NUMBER			CL STREAM RESTORATION							PROPERTY LINE							RIGHT OF WAY							EXISTING ROAD							PROPOSED ROAD							LIMITS OF DISTURBANCE					
DRAWN BY	TEV																																																																																			
CHECKED BY	DFW																																																																																			
DATE	03/09/2016																																																																																			
	EXISTING MAJOR CONTOUR		ROCK CROSS VANE		TOEWOOD STRUCTURE	 PLAN SCALE: 1" = 50'																																																																														
	EXISTING MINOR CONTOUR		SAWTOOTH DEFLECTOR		ROOTWAD/LOG VANE/ J-HOOK COMBO		 PROFILE VERTICAL SCALE: 1" = 10'																																																																													
	PROPOSED MAJOR CONTOUR		ROCK REINFORCED LOG VANE		CONVERGING ROCK CLUSTERS	 PREPARED BY: WALLACE & FANCHER, INC. 1055 S. HERMITAGE ROAD HERMITAGE, PA 16146																																																																														
	PROPOSED MINOR CONTOUR		COMBINED TOEWOOD/ROCK BANK STRUCTURE		STREAM BANK STABILIZATION		<b>PINE RUN &amp; SNAKE RUN - PLAN &amp; PROFILE</b>																																																																													
	CL EXISTING STREAM				CURVE NUMBER																																																																															
	CL STREAM RESTORATION																																																																																			
	PROPERTY LINE																																																																																			
	RIGHT OF WAY																																																																																			
	EXISTING ROAD																																																																																			
	PROPOSED ROAD																																																																																			
	LIMITS OF DISTURBANCE																																																																																			



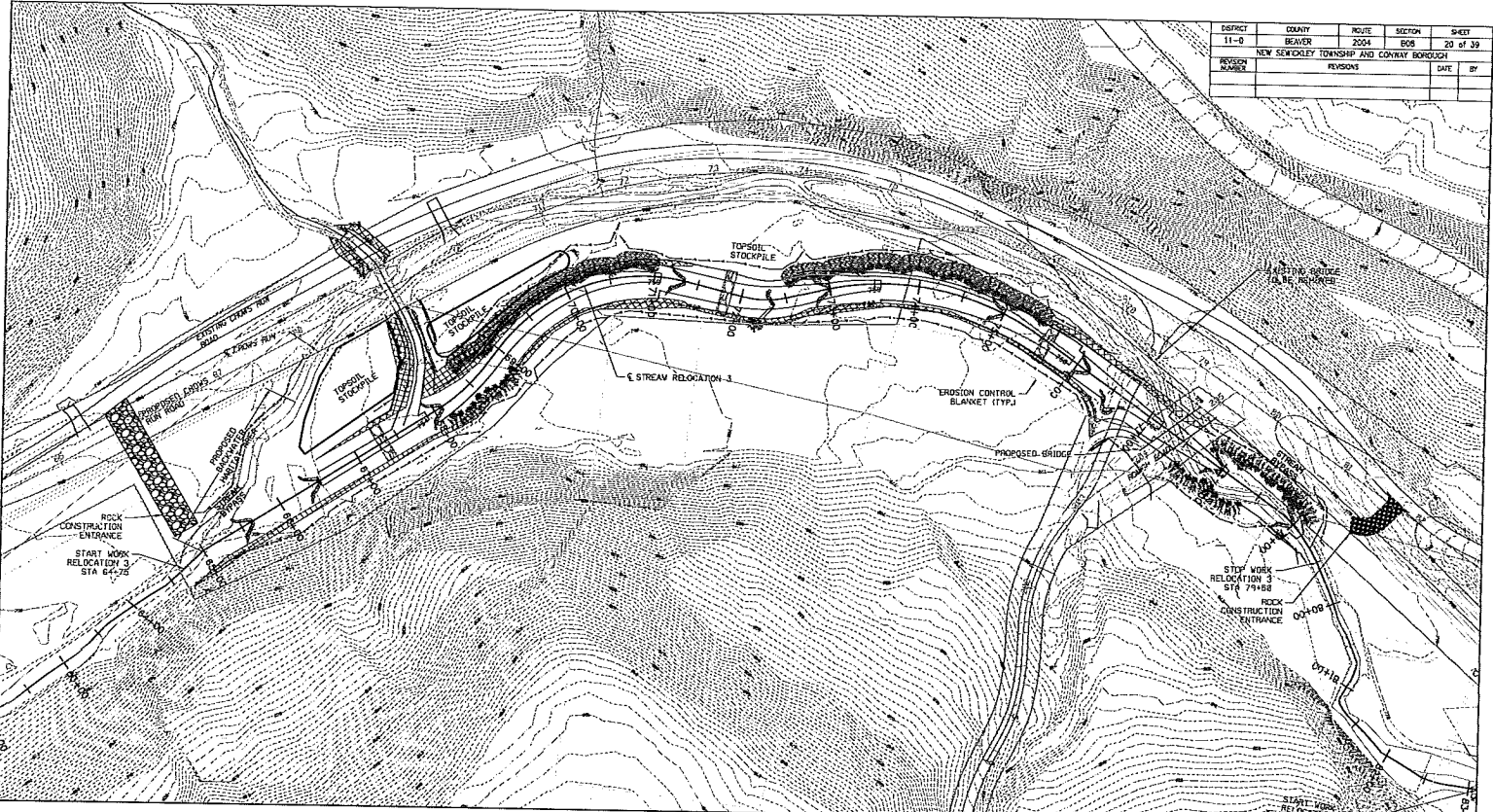
DISTRICT	COUNTY	ROUTE	SECTION	SHEET
11-0	BEAVER	2004	B08	18 of 39
NEW SEWICKLEY TOWNSHIP AND CONWAY BOROUGH				
REVISION NUMBER	REVISIONS	DATE	BY	



<table border="1"> <tr> <td>DRAWN BY</td> <td>MAC</td> </tr> <tr> <td>CHECKED BY</td> <td>DPW</td> </tr> <tr> <td>DATE</td> <td>01/04/2015</td> </tr> </table>	DRAWN BY	MAC	CHECKED BY	DPW	DATE	01/04/2015	<table border="0"> <tr> <td></td> <td>EXISTING MAJOR CONTOUR</td> <td></td> <td>ROCK CROSS VANE</td> <td></td> <td>TOEWOOD STRUCTURE</td> <td></td> <td>ROCK CONSTRUCTION ENTRANCE</td> </tr> <tr> <td></td> <td>EXISTING MINOR CONTOUR</td> <td></td> <td>SAWTOOTH DEFLECTOR</td> <td></td> <td>ROOTWAD/LOG VANE/ J-HOOK COMBO</td> <td></td> <td>EROSION CONTROL BLANKET</td> </tr> <tr> <td></td> <td>PROPOSED MAJOR CONTOUR</td> <td></td> <td>ROCK REINFORCED LOG VANE</td> <td></td> <td>CONVERGING ROCK CLUSTERS</td> <td></td> <td>FILTER SOCK</td> </tr> <tr> <td></td> <td>PROPOSED MINOR CONTOUR</td> <td></td> <td>COMBINED TOEWOOD/ROCK BANK STRUCTURE</td> <td></td> <td>STREAM BANK STABILIZATION</td> <td></td> <td>TOPSOIL STOCKPILE AREA</td> </tr> <tr> <td></td> <td>CL EXISTING STREAM</td> <td></td> <td></td> <td></td> <td>STREAM BYPASS</td> <td></td> <td></td> </tr> <tr> <td></td> <td>CL STREAM RESTORATION</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>PROPERTY LINE</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>RIGHT OF WAY</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>EXISTING ROAD</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>PROPOSED ROAD</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>LIMITS OF DISTURBANCE</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		EXISTING MAJOR CONTOUR		ROCK CROSS VANE		TOEWOOD STRUCTURE		ROCK CONSTRUCTION ENTRANCE		EXISTING MINOR CONTOUR		SAWTOOTH DEFLECTOR		ROOTWAD/LOG VANE/ J-HOOK COMBO		EROSION CONTROL BLANKET		PROPOSED MAJOR CONTOUR		ROCK REINFORCED LOG VANE		CONVERGING ROCK CLUSTERS		FILTER SOCK		PROPOSED MINOR CONTOUR		COMBINED TOEWOOD/ROCK BANK STRUCTURE		STREAM BANK STABILIZATION		TOPSOIL STOCKPILE AREA		CL EXISTING STREAM				STREAM BYPASS				CL STREAM RESTORATION								PROPERTY LINE								RIGHT OF WAY								EXISTING ROAD								PROPOSED ROAD								LIMITS OF DISTURBANCE							<p>STOP RESTORATION AREA 1 / BEGIN WORK RELOCATION 2 STA 47+18</p> <p>PROPOSED CROWS RUN ROAD</p> <p>EXISTING CROWS RUN ROAD</p> <p>EXISTING DRIVEWAY</p> <p>EXISTING STREAM</p> <p>E OF STREAM RELOCATION</p> <p>ROCK CONSTRUCTION ENTRANCE</p> <p>EROSION CONTROL BLANKET</p> <p>TOPSOIL STOCKPILE</p> <p>TOEWOOD STRUCTURE</p> <p>ROOTWAD/LOG VANE/ J-HOOK COMBO</p> <p>CONVERGING ROCK CLUSTERS</p> <p>STREAM BANK STABILIZATION</p> <p>STREAM BYPASS</p> <p>ROCK CONSTRUCTION ENTRANCE</p> <p>EROSION CONTROL BLANKET</p> <p>FILTER SOCK</p> <p>TOPSOIL STOCKPILE AREA</p>	<p>8 50' 100'</p> <p>PLAN</p> <p>SCALE: 1" = 50'</p>	<p>PREPARED BY: WALLACE &amp; PANCHER, INC. 1043 S. HERITAGE ROAD HERVITACE, PA 16148</p>
DRAWN BY	MAC																																																																																																	
CHECKED BY	DPW																																																																																																	
DATE	01/04/2015																																																																																																	
	EXISTING MAJOR CONTOUR		ROCK CROSS VANE		TOEWOOD STRUCTURE		ROCK CONSTRUCTION ENTRANCE																																																																																											
	EXISTING MINOR CONTOUR		SAWTOOTH DEFLECTOR		ROOTWAD/LOG VANE/ J-HOOK COMBO		EROSION CONTROL BLANKET																																																																																											
	PROPOSED MAJOR CONTOUR		ROCK REINFORCED LOG VANE		CONVERGING ROCK CLUSTERS		FILTER SOCK																																																																																											
	PROPOSED MINOR CONTOUR		COMBINED TOEWOOD/ROCK BANK STRUCTURE		STREAM BANK STABILIZATION		TOPSOIL STOCKPILE AREA																																																																																											
	CL EXISTING STREAM				STREAM BYPASS																																																																																													
	CL STREAM RESTORATION																																																																																																	
	PROPERTY LINE																																																																																																	
	RIGHT OF WAY																																																																																																	
	EXISTING ROAD																																																																																																	
	PROPOSED ROAD																																																																																																	
	LIMITS OF DISTURBANCE																																																																																																	

CROWS RUN STREAM RELOCATION - E&S PLAN

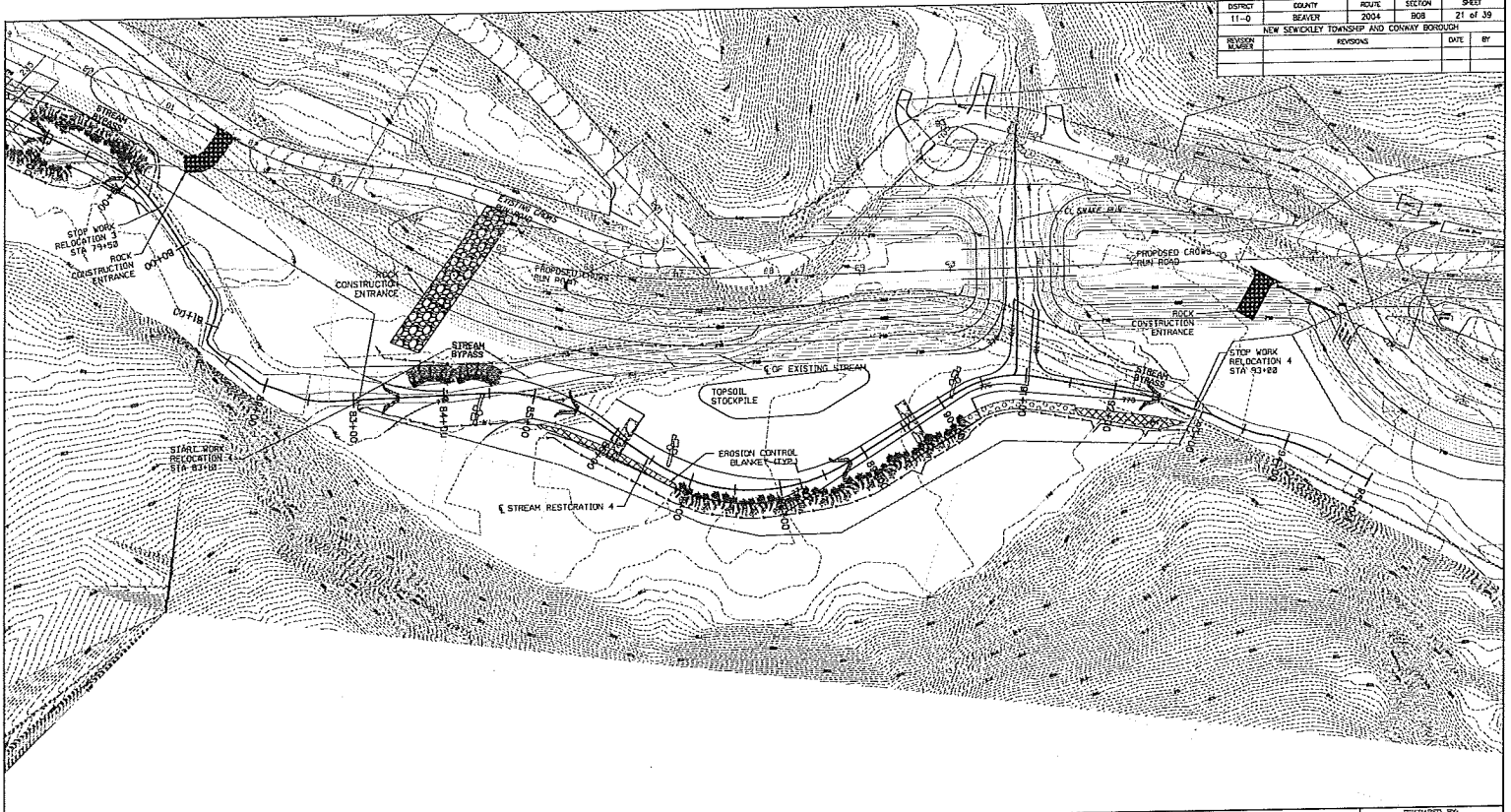
DISTRICT	COUNTY	ROUTE	SECTION	SHEET
11-0	BEAVER	2504	608	20 of 39
NEW SENICKLEY TOWNSHIP AND CONWAY BOROUGH				
PROJECT NUMBER	PERSONS			DATE
				BY



<table border="1"> <tr> <td>DRAWN BY</td> <td>MAC</td> </tr> <tr> <td>CHECKED BY</td> <td>DPW</td> </tr> <tr> <td>DATE</td> <td>01/06/2016</td> </tr> </table>	DRAWN BY	MAC	CHECKED BY	DPW	DATE	01/06/2016	<table border="0"> <tr> <td></td> <td>EXISTING MAJOR CONTOUR</td> <td></td> <td>ROCK CROSS VANE</td> <td></td> <td>TOE/WOOD STRUCTURE</td> <td></td> <td>ROCK CONSTRUCTION ENTRANCE</td> </tr> <tr> <td></td> <td>EXISTING MINOR CONTOUR</td> <td></td> <td>SAWTOOTH DEFLECTOR</td> <td></td> <td>ROCK/ROAD/LOG VANE/ J-HOOK CORNER</td> <td></td> <td>EROSION CONTROL BLANKET</td> </tr> <tr> <td></td> <td>PROPOSED MAJOR CONTOUR</td> <td></td> <td>ROCK REINFORCED LOG VANE</td> <td></td> <td>CONVERGING ROCK CLUSTERS</td> <td></td> <td>FILTER ROCK</td> </tr> <tr> <td></td> <td>EXISTING STREAM</td> <td></td> <td>COMBINED TOE/WOOD/ROCK BANK STRUCTURE</td> <td></td> <td>STREAM BANK STABILIZATION</td> <td></td> <td>TOPSOIL STOCKPILE AREA</td> </tr> <tr> <td></td> <td>CL. STREAM RESTORATION</td> <td></td> <td></td> <td></td> <td>STREAM BYPASS</td> <td></td> <td></td> </tr> <tr> <td></td> <td>PROPERTY LINE</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>RIGHT OF WAY</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>EXISTING ROAD</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>PROPOSED ROAD</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>LIMITS OF DISTURBANCE</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		EXISTING MAJOR CONTOUR		ROCK CROSS VANE		TOE/WOOD STRUCTURE		ROCK CONSTRUCTION ENTRANCE		EXISTING MINOR CONTOUR		SAWTOOTH DEFLECTOR		ROCK/ROAD/LOG VANE/ J-HOOK CORNER		EROSION CONTROL BLANKET		PROPOSED MAJOR CONTOUR		ROCK REINFORCED LOG VANE		CONVERGING ROCK CLUSTERS		FILTER ROCK		EXISTING STREAM		COMBINED TOE/WOOD/ROCK BANK STRUCTURE		STREAM BANK STABILIZATION		TOPSOIL STOCKPILE AREA		CL. STREAM RESTORATION				STREAM BYPASS				PROPERTY LINE								RIGHT OF WAY								EXISTING ROAD								PROPOSED ROAD								LIMITS OF DISTURBANCE							<table border="0"> <tr> <td></td> <td></td> </tr> <tr> <td colspan="2">PLAN</td> </tr> <tr> <td colspan="2">SCALE: 1" = 50'</td> </tr> </table>			PLAN		SCALE: 1" = 50'		<p>PREPARED BY: WALLACE &amp; PARTNER, INC. 1045 S. HERITAGE ROAD HERMITAGE, PA 15116</p>
DRAWN BY	MAC																																																																																														
CHECKED BY	DPW																																																																																														
DATE	01/06/2016																																																																																														
	EXISTING MAJOR CONTOUR		ROCK CROSS VANE		TOE/WOOD STRUCTURE		ROCK CONSTRUCTION ENTRANCE																																																																																								
	EXISTING MINOR CONTOUR		SAWTOOTH DEFLECTOR		ROCK/ROAD/LOG VANE/ J-HOOK CORNER		EROSION CONTROL BLANKET																																																																																								
	PROPOSED MAJOR CONTOUR		ROCK REINFORCED LOG VANE		CONVERGING ROCK CLUSTERS		FILTER ROCK																																																																																								
	EXISTING STREAM		COMBINED TOE/WOOD/ROCK BANK STRUCTURE		STREAM BANK STABILIZATION		TOPSOIL STOCKPILE AREA																																																																																								
	CL. STREAM RESTORATION				STREAM BYPASS																																																																																										
	PROPERTY LINE																																																																																														
	RIGHT OF WAY																																																																																														
	EXISTING ROAD																																																																																														
	PROPOSED ROAD																																																																																														
	LIMITS OF DISTURBANCE																																																																																														
PLAN																																																																																															
SCALE: 1" = 50'																																																																																															

CROWS RUN STREAM RELOCATION -- E&S PLAN

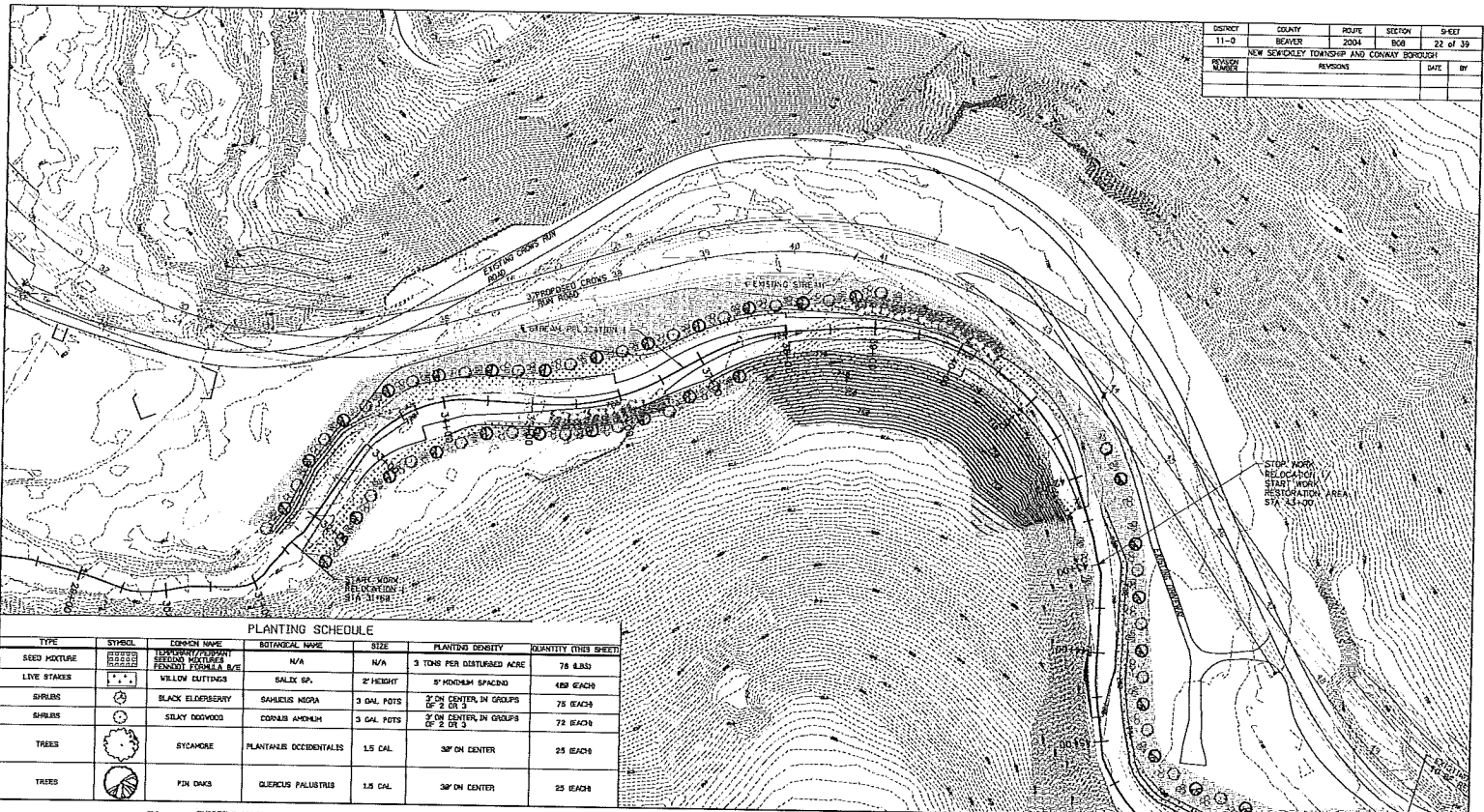
DISTRICT	COUNTY	ROUTE	SECTION	SHEET
11-0	BEAVER	2004	808	21 of 39
NEW SEWICKLEY TOWNSHIP AND COUNTY BODICES				
DESIGN NUMBER	REVISED	DATE	BY	



<table border="1"> <tr> <td>DRAWN BY</td> <td>MAC</td> </tr> <tr> <td>CHECKED BY</td> <td>DPW</td> </tr> <tr> <td>DATE</td> <td>01/06/2016</td> </tr> </table>	DRAWN BY	MAC	CHECKED BY	DPW	DATE	01/06/2016	<table border="0"> <tr> <td></td> <td>EXISTING MAJOR CONTOUR</td> <td></td> <td>ROCK CROSS VANE</td> <td></td> <td>TOE WOOD STRUCTURE</td> <td></td> <td>ROCK CONSTRUCTION ENTRANCE</td> </tr> <tr> <td></td> <td>EXISTING MINOR CONTOUR</td> <td></td> <td>SAWTOOTH DEFLECTOR</td> <td></td> <td>ROOTWAD/LOG VANE/ J-HOOK LOGBO</td> <td></td> <td>EROSION CONTROL BLANKET</td> </tr> <tr> <td></td> <td>PROPOSED MAJOR CONTOUR</td> <td></td> <td>ROCK REINFORCED LOG VANE</td> <td></td> <td>CONVERGING ROCK CLUSTERS</td> <td></td> <td>FILTER SOCK</td> </tr> <tr> <td></td> <td>PROPOSED MINOR CONTOUR</td> <td></td> <td>COMBINED TOE WOOD/ROCK BANK STRUCTURE</td> <td></td> <td>STREAM BANK STABILIZATION</td> <td></td> <td>TOPSOIL STOCKPILE AREA</td> </tr> <tr> <td></td> <td>CL EXISTING STREAM</td> <td></td> <td></td> <td></td> <td>STREAM BYPASS</td> <td></td> <td></td> </tr> <tr> <td></td> <td>CL STREAM RESTORATION</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>PROPERTY LINE</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>RIGHT OF WAY</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>EXISTING ROAD</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>PROPOSED ROAD</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>LIMITS OF DISTURBANCE</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		EXISTING MAJOR CONTOUR		ROCK CROSS VANE		TOE WOOD STRUCTURE		ROCK CONSTRUCTION ENTRANCE		EXISTING MINOR CONTOUR		SAWTOOTH DEFLECTOR		ROOTWAD/LOG VANE/ J-HOOK LOGBO		EROSION CONTROL BLANKET		PROPOSED MAJOR CONTOUR		ROCK REINFORCED LOG VANE		CONVERGING ROCK CLUSTERS		FILTER SOCK		PROPOSED MINOR CONTOUR		COMBINED TOE WOOD/ROCK BANK STRUCTURE		STREAM BANK STABILIZATION		TOPSOIL STOCKPILE AREA		CL EXISTING STREAM				STREAM BYPASS				CL STREAM RESTORATION								PROPERTY LINE								RIGHT OF WAY								EXISTING ROAD								PROPOSED ROAD								LIMITS OF DISTURBANCE							<p>SCALE: 1" = 50'</p> <p>PLAN</p> <p>8" 60' 120"</p>	<p>PREPARED BY: WALLACE &amp; PANCHER, INC. 1085 S. HERITAGE ROAD HERMITAGE, PA 16148</p>
DRAWN BY	MAC																																																																																																
CHECKED BY	DPW																																																																																																
DATE	01/06/2016																																																																																																
	EXISTING MAJOR CONTOUR		ROCK CROSS VANE		TOE WOOD STRUCTURE		ROCK CONSTRUCTION ENTRANCE																																																																																										
	EXISTING MINOR CONTOUR		SAWTOOTH DEFLECTOR		ROOTWAD/LOG VANE/ J-HOOK LOGBO		EROSION CONTROL BLANKET																																																																																										
	PROPOSED MAJOR CONTOUR		ROCK REINFORCED LOG VANE		CONVERGING ROCK CLUSTERS		FILTER SOCK																																																																																										
	PROPOSED MINOR CONTOUR		COMBINED TOE WOOD/ROCK BANK STRUCTURE		STREAM BANK STABILIZATION		TOPSOIL STOCKPILE AREA																																																																																										
	CL EXISTING STREAM				STREAM BYPASS																																																																																												
	CL STREAM RESTORATION																																																																																																
	PROPERTY LINE																																																																																																
	RIGHT OF WAY																																																																																																
	EXISTING ROAD																																																																																																
	PROPOSED ROAD																																																																																																
	LIMITS OF DISTURBANCE																																																																																																

CROWS RUN STREAM RELOCATION - E&S PLAN

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
11-0	BEAVER	2004	808	22 of 39
NEW SCHWOLEY TOWNSHIP AND CONWAY BOROUGH				
SYMBOL	REVISIONS	DATE	BY	

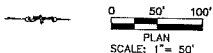


**PLANTING SCHEDULE**

TYPE	SYMBOL	COMMON NAME	BOTANICAL NAME	SIZE	PLANTING DENSITY	QUANTITY (THIS SHEET)
SEED MIXTURE		INDIAN/COMMON SEEDING MIXTURE (PONDUS FODERA & V)	N/A	N/A	3 TONS PER DISTURBED ACRE	76 6.833
LIVE STAKES		VILLOW CUTTINGS	SALIX SP.	2' HEIGHT	3' HOOKEM SPACING	489 EACH
SHRUBS		BLACK ELDERBERRY	SAMBUX NIGRA	3 GAL. POTS	2' ON CENTER IN GROUPS OF 3 OR 5	75 EACH
SHRUBS		SILKY DOGWOOD	CORNUS AMOMUM	3 GAL. POTS	2' ON CENTER IN GROUPS OF 2 OR 3	72 EACH
TREES		SYCAMORE	PLATANUS OCCIDENTALIS	1.5 CAL.	30' ON CENTER	25 EACH
TREES		PIN OAKS	QUERCUS PALUSTRIS	1.5 CAL.	30' ON CENTER	25 EACH

	EXISTING MAJOR CONTOUR		ROCK CROSS VANE		TOEWOOD STRUCTURE
	EXISTING MINOR CONTOUR		SAWTOOTH DEFLECTOR		ROOTWAD/LOG VANE/ J-HOOK COMBO
	PROPOSED MAJOR CONTOUR		ROCK REINFORCED LOG VANE		CONVERGING ROCK CLUSTERS
	PROPOSED MINOR CONTOUR		COMBINED TOEWOOD/ROCK BANK STRUCTURE		STREAM BANK STABILIZATION
	CL EXISTING STREAM				
	CL STREAM RESTORATION				
	PROPERTY LINE				
	RIGHT OF WAY				
	EXISTING ROAD				
	PROPOSED ROAD				
	LIMITS OF DISTURBANCE				

NOTE:  
PLANTING QUANTITY FOR RELOCATION 1  
DOES NOT INCLUDE RESTORATION AREA 1



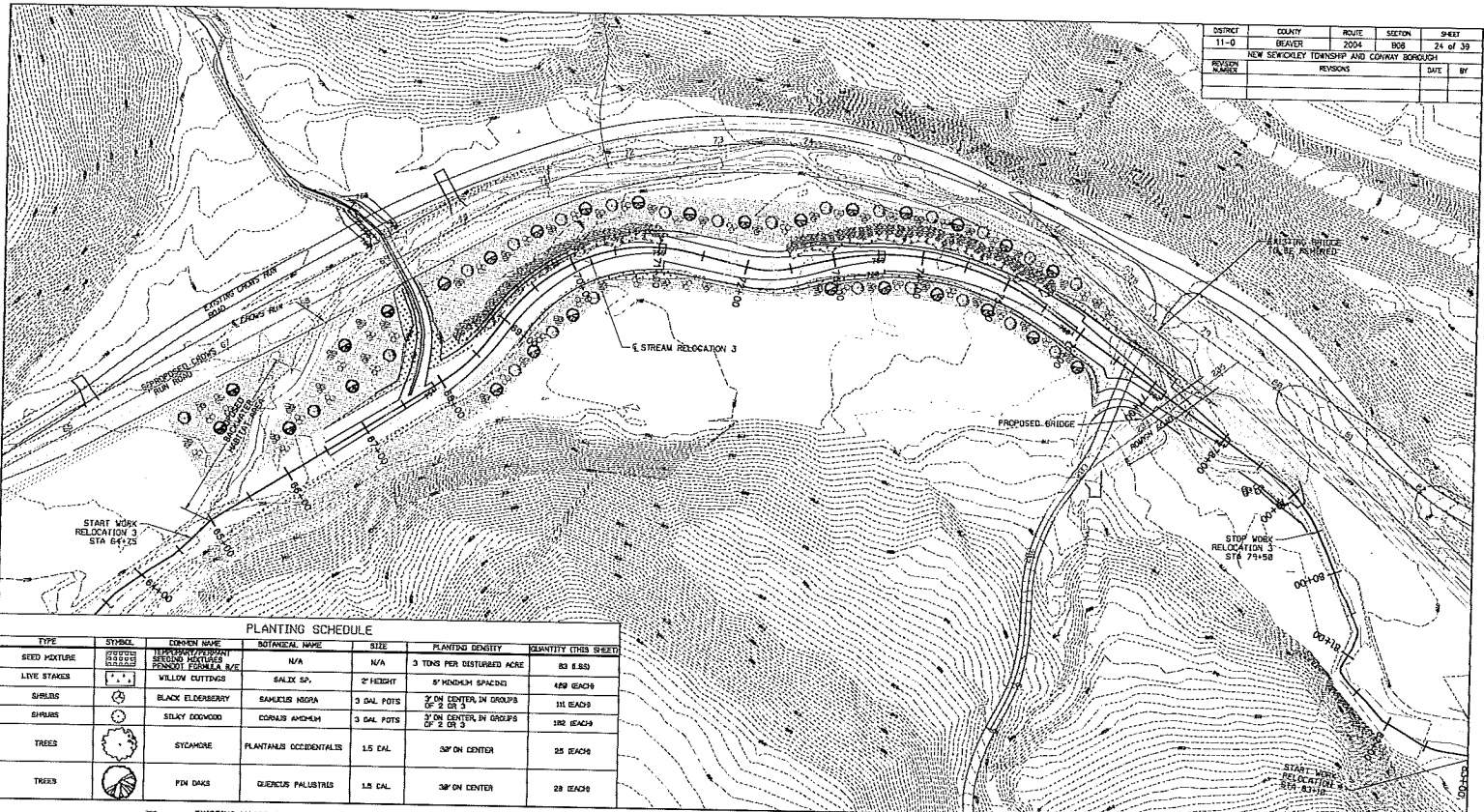
DRAWN BY: WAD  
CHECKED BY: DPW  
DATE: 01/06/2016

**CROWS RUN STREAM RELOCATION – PLANTING PLAN**

PREPARED BY:  
WALLACE & PANCHEN, INC.  
1005 S. HERMITAGE ROAD  
HERKOTAGE, PA 16118



DISTRICT	COUNTY	ROUTE	SECTION	SHEET
11-0	BLAVER	2004	BOB	24 of 39
NEW SEWICKLEY TOWNSHIP AND CONWAY BOROUGH				
PROJECT NAME	REVISION	DATE	BY	

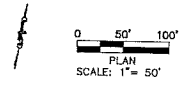


**PLANTING SCHEDULE**

TYPE	SYMBOL	COMMON NAME	BOTANICAL NAME	SIZE	PLANTED DENSITY	QUANTITY (THIS SHEET)
SEED MIXTURE	□□□□□	TEMPERATE ZONE SEEDING MIXTURES PONDUS GORDIA B/C	N/A	N/A	3 TONS PER DISTURBED ACRE	83 E.SB
LIVE STAKES	■	WILLOW CUTTINGS	SALIX SP.	2' HEIGHT	8' MINIMUM SPACING	489 EACH
SHRUBS	○	BLACK ELDERBERRY	SAMBLES NIGRA	3 GAL POTS	2' ON CENTER IN GROUPS 6' 2' OR 3'	111 EACH
SHRUBS	○	SILKY DOGWOOD	CORNUS AMOMUM	3 GAL POTS	3' ON CENTER IN GROUPS 6' 2' OR 3'	182 EACH
TREES	○	STYCAMORE	PLATANUS OCCIDENTALIS	1.5 CAL.	30' ON CENTER	25 EACH
TREES	○	PIN OAKS	QUERCUS PALUSTRIS	1.5 CAL.	30' ON CENTER	28 EACH

- 20' — EXISTING MAJOR CONTOUR
  - 5' — EXISTING MINOR CONTOUR
  - 20' — PROPOSED MAJOR CONTOUR
  - 5' — PROPOSED MINOR CONTOUR
  - CL — EXISTING STREAM
  - CL — STREAM RESTORATION
  - — PROPERTY LINE
  - — RIGHT OF WAY
  - — EXISTING ROAD
  - — PROPOSED ROAD
  - — LIMITS OF DISTURBANCE
- ROCK CROSS VANE
  - SAWTOOTH DEFLECTOR
  - ROCK REINFORCED LOG VANE
  - COMBINED TOEWOOD/ROCK BANK STRUCTURE
  - TOEWOOD STRUCTURE
  - ROOTWAD/LOG VANE/J-HOOK COMBO
  - CONVERGING ROCK CLUSTERS
  - STREAM BANK STABILIZATION

DRAWN BY: WAC  
 CHECKED BY: DPW  
 DATE: 01/06/2016



PREPARED BY:  
 WALLACE & PANCHER, INC.  
 1066 S. HERITAGE ROAD  
 NEWRING, PA 15149

**CROWS RUN STREAM RELOCATION — PLANTING PLAN**







WETLAND MITIGATION PLAN  
FOR  
S.R. 2004 SECTION B08  
IN  
BEAVER COUNTY

SHEET INDEX

DESCRIPTION	SHEET
TITLE SHEET	1
INDEX MAP AND GENERAL NOTES	2
DETAILS	3
TABULATION OF QUANTITIES	4
GRADING PLAN	5
PLANTING PLAN	6
SEEDING PLAN	7
CROSS SECTIONS	8 THRU 11

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
11-0	BEAVER	2004	B08	1 OF 11
NEW SEWICKLEY TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

PREPARED BY:



140 E. SHAWNEE BLVD., SUITE 200  
MARTINSBURG, PA 15110-2500

Operator: jbosso  
 File: G:\W3\0208\0202 Freedom Mod\Drawing\Title Sheet.dgn  
 Plot: 02/17/2016

In addition to meeting physical parameters, the design of the stream relocations will maintain natural structural characteristics of Crows Run to which the indigenous aquatic ecosystem has adapted over time. This relocation project itself cannot address water quality issues created by point-source pollution within the watershed. However, if water quality is addressed in the Crows Run watershed in the future, the stream habitat within Crows Run will provide a stable, habitable environment for the many species of aquatic organisms native to the Crows Run watershed.

The design developed for the restoration of Crows Run through the relocation of four reaches, as dictated by the SR 2004 reconstruction, meets the intent of NSCD by creating stream reaches that are appropriate for the landscape within which they occur, are sufficient for the hydraulic conditions which occur (e.g. stable), and should have, at minimum, no net loss in ecological integrity.

P071ms12/9/2016

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
11-0	DELAWARE	2004	108	2 OF 11
REVISION	NO.	REVISIONS	DATE	BY

**GENERAL NOTES**

CONSTRUCT PROJECT IN ACCORDANCE WITH PUBLICATION 408 SPECIFICATIONS, DATED 2016.

THIS IS FEDERAL AID PROJECT AND AS SUCH IS SUBJECT TO INSPECTION BY REPRESENTATIVES OF THE FEDERAL HIGHWAY ADMINISTRATION AND THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION.

AT LEAST THREE WORKING DAYS PRIOR TO EXCAVATION, THE CONTRACTOR MUST CONTACT THE PA ONCE - CALL SYSTEM INC., PHONE 1-800-242-1176.

THE HORIZONTAL CONTROL IS ON AN ASSUMED PROJECT COORDINATE SYSTEM.

VERTICAL CONTROL IS BASED ON AN ASSUMED VERTICAL DATUM.

ALL WETLAND CONSTRUCTION ACTIVITIES SHALL BE UNDER THE DIRECTION OF A PROFESSIONAL LANDSCAPER FAMILIAR WITH WETLAND CONSTRUCTION TECHNIQUES, THE DESIGNATED CONSULTANT AND/OR THE PENNDOT ENVIRONMENTAL UNIT.

IDENTIFY MITIGATION AREAS BY SURVEY AND FIELD MARK WITH FLAGGING.

USE BEST MANAGEMENT PRACTICES IN ACCORDANCE WITH THE EROSION AND SEDIMENT POLLUTION CONTROL PLAN.

TEMPORARILY DIVERT DRAINAGE AND RUNOFF AWAY FROM PROPOSED MITIGATION AREAS WHERE POSSIBLE TO PREVENT WORKING IN SATURATED OR INUNDATED CONDITIONS. UPON COMPLETION OF CONSTRUCTION AND PLANTING, REMOVE TEMPORARY DIVERSIONS.

GRADE MITIGATION SITES TO DESIRED SUBGRADE ELEVATIONS, SHAPE AND SIZE. REMOVE SURPLUS MATERIAL FROM BORK AREAS AND DISPOSE OF WASTE MATERIAL IN AN APPROVED MANNER. ACCORDING TO THE PHASE 11/711 ENVIRONMENTAL SITE ASSESSMENT REPORT, THIS AREA CONTAINS SUBSOILS THAT EXCEED THE CLEAN FILL THRESHOLD ACCORDING TO THE PAPER. EXCESS MATERIAL THAT DOES NOT MEET CLEAN FILL STANDARDS CAN BE USED ON-SITE BUT OUTSIDE THE FLOODPLAIN, MUST BE ENCAPSULATED WITH A MINIMUM OF THREE FEET OF FILL, AND CANNOT COME IN CONTACT WITH SPRINGS, SEEP, MINE RUNOFF, OR OTHER SURFACE WATER, ETC. CONTRACTOR WILL BE RESPONSIBLE FOR DOCUMENTING WHERE THE MATERIAL IS PLACED, INCLUDING AMOUNTS, LOCATION, AND ELEVATIONS.

PLACE IMPORTED CLAY LINER / CLAY SOIL AND TOPSOIL TO MINIMUM DEPTHS SHOWN ON THE MITIGATION PLANS. COMPACT THE CLAY LINER / CLAY SOIL TO STOP SUBSURFACE WATER MOVEMENT. TOPSOIL MIXTURE SHALL BE PLACED IN THREE 131 INCH (MAXIMUM), UNCOMPACTED LIFTS UP TO FINAL GRADE ELEVATIONS. MINOR IRREGULARITIES (1/2" - 4" INCHES) TO THE TOPSOIL SURFACE WILL ADD DIVERSITY TO THE SITE.

UPON COMPLETION OF GRADING, DELINEATE AND IDENTIFY PLANTING LOCATIONS IN THE FIELD.

PLANT PROPOSED SHRUBS, NURSERY PLANTS, STOCK, AND/OR SEED ACCORDING TO SPECIFICATIONS AND PLANS. THE CONTRACTOR SHALL OBTAIN NURSERY APPROVALS FROM THE PENNDOT ENVIRONMENTAL UNIT OR DESIGNATED CONSULTANT PRIOR TO PLACEMENT OF PLANTS, STOCK OR SEED PRIOR TO PLANTING TO VERIFY THAT ALL PLANTS ARE HEALTHY AND ALIVE.

WATER PLANTINGS AS NEEDED ACCORDING TO SPECIFICATIONS DURING DRY PERIODS.

SEQUENCE CONSTRUCTION IN A MANNER THAT WILL ALLOW FOR FALL SEEDING AND SPRING PLANTING OF SHRUBS FOR OPTIMUM ESTABLISHMENT OF VEGETATION. PLACE TEMPORARY SEEDING ON DOMINANT BORK AREAS.

CONSTRUCTION CONSULTANT IS TO PROVIDE AS-BUILT PLANS UPON CONSTRUCTION COMPLETION OF THE WETLAND MITIGATION SITE.

DETAILS, OTHER THAN THOSE INDICATED, ARE ON THE FOLLOWING STANDARD DRAWINGS:

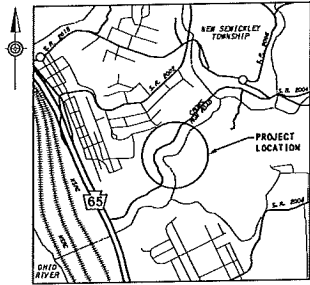
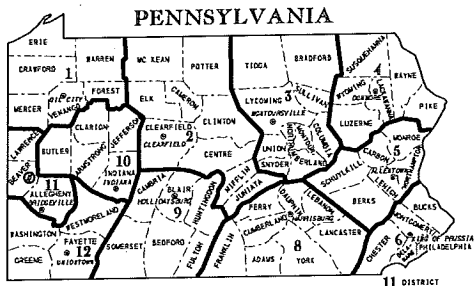
STANDARD DRAWING	DATE APPROVED
RC - 10M	06-01-10
RC - 70M	06-01-10
RC - 73M	06-01-10
RC - 75M	06-01-10
RC - 77M	06-01-10
RC - 91M	06-01-10

**SUMMARY OF WETLAND MITIGATION CONSTRUCTION BASELINE COORDINATES**

BASED ON AN ASSUMED COORDINATE SYSTEM

STATION	POINT	COORDINATES		BEARING
		NORTH	EAST	
45+50.00	P.O.T.	499,285.1785	1,310,023.4858	N 54°27'44" E
48+27.89	P.C.	499,446.5954	1,310,249.6107	N 54°27'44" E
48+89.24	P.T.	499,482.3556	1,310,299.5337	N 40°44'36" E
49+50.00	P.O.T.	499,528.8372	1,310,339.5155	

FOUR PLACE COORDINATES ARE FOR COMPUTATIONAL PURPOSES ONLY AND DO NOT IMPLY A PRECISION BEYOND TWO DECIMAL PLACES.



**LOCATION MAP**  
SCALE 1" = 1500'

**WETLAND MITIGATION PLAN**

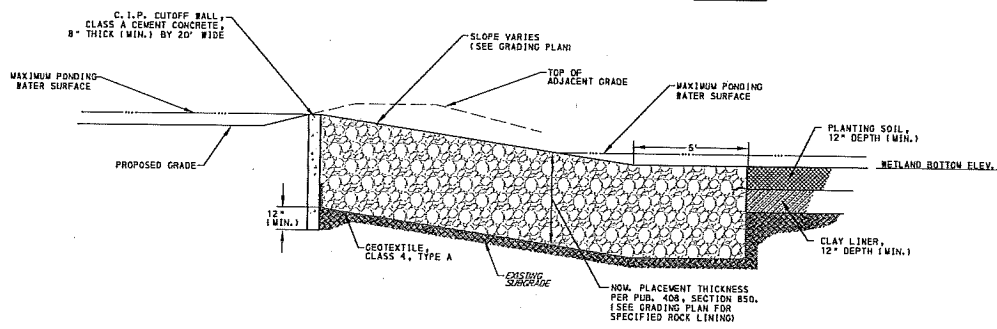
Operator: jsham  
Title: WETLAND MITIGATION PLAN - Notes.dgn

Port:\ms2\7705

Project: 14001  
File: 25-00-023-002 Freedom Road\Craving\Drains.dgn

### DETAILS

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
11-D	BEAVER	2004	008	3 OF 11
NEW SEWICKLEY TOWNSHIP				
REVISION	REVISIONS	DATE	BY	



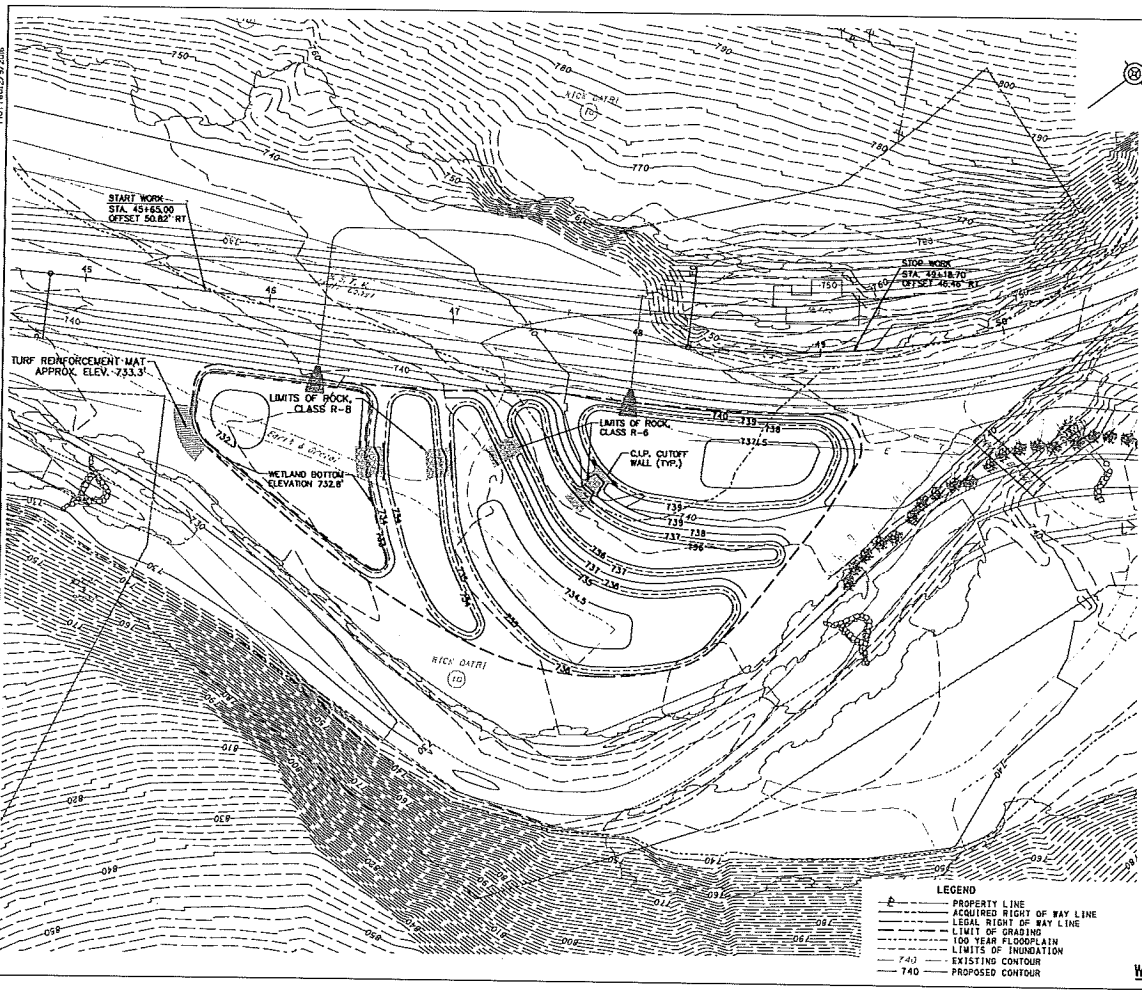
**WETLAND SPILLWAY TYPICAL SECTION**  
NOT TO SCALE



Project No. 2004-002  
 Date: 08/12/04  
 Drawn: J. [Name]  
 Checked: [Name]  
 Scale: 1" = 20'

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
11-0	BEAVER	2004	808	5 OF 11
NEW SERICKLEY TOWNSHIP				
REVISION	DATE	BY		

### GRADING PLAN



**CONSTRUCTION SEQUENCE**

THE GRADING CONTRACTOR SHALL INSTALL PROTECTIVE FENCE AROUND THE STREAM RESTORATION SITE AND ENVIRONMENTALLY SENSITIVE AREAS AS SHOWN ON THE EAS PLAN. ACCESS DURING CONSTRUCTION IS LIMITED TO THE AREA BEING DISTURBED FOR THE CONSTRUCTION OF THE WETLAND MITIGATION SITE. POST CONSTRUCTION ACCESS IS LIMITED TO THE ESTABLISHED ROAD NETWORK. IF ADDITIONAL ACCESS IS NEEDED, COORDINATION WITH PENNDOT AND THE PADEP WILL BE WARRANTED TO SECURE PROPER CLEARANCES/PERMITS ESPECIALLY IF A STREAM CROSSING IS REQUIRED.

1. THE GRADING CONTRACTOR SHALL INSTALL PERIMETER CONTROL DEVICES AT LOCATIONS IDENTIFIED ON THE EAS PLAN.
2. CLEARING AND GRUBBING
  - a. CLEAR THE AREA TO BE EXCAVATED OF ALL VEGETATION.
  - b. REMOVE ALL TREE ROOTS, ROCKS AND BouldERS.
  - c. COMPLETE WORK IN A MANNER THAT DOES NOT IMPACT PROTECTED RESOURCES.
  - d. AREAS TO BE DISTURBED SHALL BE ACCESSED THROUGH ADJACENT DISTURBED AREAS.
3. EXCAVATE BOTTOM OF EACH DEPRESSIONAL REPLACEMENT WETLAND TO THE DESIRED ELEVATION (ROUGH GRADING)
  - a. COMPLETE WORK IN ACCORDANCE WITH THE PLANS FOR REPRESENTATIVE.
  - b. IN ORDER TO MINIMIZE DISTURBED AREAS, THE CONTRACTOR SHALL ACCESS THE MORE DISTANT CELLS THROUGH AREAS TO BE DISTURBED BY THE SUBSEQUENT CONSTRUCTION OF THE NEAR DEPRESSIONS.
  - c. REMOVE EXCAVATED MATERIAL AND DISPOSE OF MATERIAL IN AN APPROVED MANNER. SEE GENERAL NOTES FOR ADDITIONAL REQUIREMENTS REGARDING EXCESS MATERIAL AND CLEAN FILL STANDARDS.
4. EXCAVATE AND CONSTRUCT THE CAST-IN-PLACE CUTOFF WALLS IN ACCORDANCE WITH THE DETAILS AND PUB 408 SPECIFICATIONS.
5. EXCAVATE THE WETLAND SPILLWAY CHANNELS AND PLACE RIPRAP IN ACCORDANCE WITH THE PLAN, DETAILS AND PUB 408 SPECIFICATIONS.
6. PLACE THE CLAY LINER, CLAY SOIL AND COMPACT TO FORM AN IMPERMEABLE SURFACE.
7. APPLY AND GRADE GROWING MEDIUM WITHIN REPLACEMENT WETLAND DEPRESSIONS ACCORDING TO THE WETLAND DESIGN.
8. PLACE THE TURF REINFORCEMENT MAT WHERE SHOWN ON THE PLAN. INSTALL IN ACCORDANCE WITH PUB 408, SECTION 806.31d) SPECIFICATIONS.
9. SEED, PLANT AND MULCH ACCORDING TO PLANTING PLAN.
  - a. THE CONTRACTOR SHALL PLACE TEMPORARY SEEDING ON ALL DISTURBED AREAS DURING ANY STOPPAGE OF WORK AND IMMEDIATELY AFTER EARTHWORK IS COMPLETED.
  - b. TEMPORARY AND PERMANENT SEEDING MIXTURES MAY BE PLACED SEPARATELY OR CONCURRENTLY BASED ON THE SEEDING SCHEDULES.
  - c. SCARPED, CRUSTED OR OVERGROWN AREAS, AS DIRECTED, PRIOR TO PLACING PERMANENT SEED MIXTURES.
  - d. SEED EXTERIOR SLOPES WITH NATIVE SEED MIXTURE.
10. THE CONTRACTOR SHALL MAINTAIN BMPs UNTIL THE PERMANENT WETLAND SEED MIXTURE AND PLANTINGS ARE ESTABLISHED.
11. THE CONTRACTOR SHALL REMOVE THE BMPs WITH THE APPROVAL OF THE BEAVER COUNTY CONSERVATION DISTRICT AND THE ONSITE REPRESENTATIVE.

**LEGEND**

	PROPERTY LINE
	ACQUIRED RIGHT OF WAY LINE
	LIMIT OF GRADING
	100 YEAR FLOODPLAIN
	LIMITS OF INUNDATION
	740 - EXISTING CONTOUR
	740 - PROPOSED CONTOUR

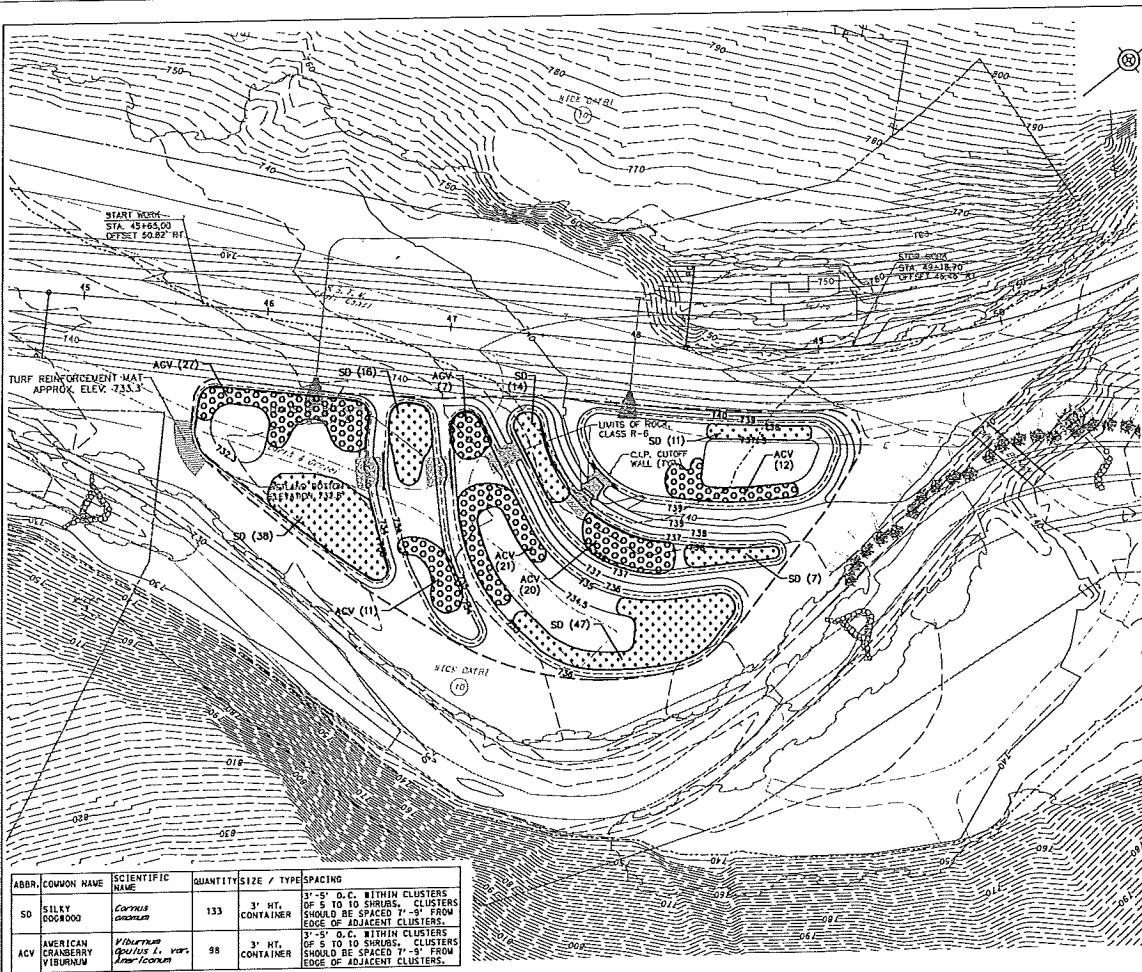
SCALE IN FEET  
 0 25 50

### WETLAND MITIGATION PLAN



Printed: 9/20/05

PROJECT: Kansas  
FILE: D:\103-0228.002\Fredonia\Recon\wetting\1115a\_Sheet.dgn



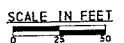
DISTRICT	COUNTY	ROUTE	SECTION	SHEET
11-D	BEAVER	2004	808	6 OF 11
NEW SEWICKLEY TOWNSHIP				
REVISION	NO.	REVISIONS	DATE	BY

**PLANTING PLAN**

- PLANTING NOTES**
- FOR PLANTING DETAILS, SEE PENNDOT RC-91W DRAWINGS.
  - LIVE PLANTINGS SHOULD OCCUR IMMEDIATELY AFTER CONSTRUCTION FINISHES WITH A PREFERENCE FOR SPRING PLANTING.
    - A MINIMUM OF 100 FROST FREE DAYS IS REQUIRED FOR PLANT SURVIVAL.
    - PLANTINGS SHOULD BE PERFORMED IN ACCORDANCE WITH SECTION 808.3 AND THE ENCLOSED PLANTING PLAN.
    - SHRUBS SHOULD BE PLANTED IN CLUSTERS OF 5 TO 10 STEMS. WITHIN EACH CLUSTER, STEMS SHOULD BE SPACED 3' TO 5' FROM NEAREST STEM. EACH CLUSTER OF SHRUBS SHOULD BE SPACED 7' TO 9' FROM THE OUTER EDGE OF ADJACENT CLUSTERS.
    - PLANTINGS SHOULD NOT BE PLACED IN STANDING WATER IN EXCESS OF 3".
  - ALL WOUNDS CREATED IN THE PLANTING PIT SHALL CONSIST OF SOIL MATERIAL FROM THE PIT EXCAVATION FREE OF ALL STONES AND FOREIGN MATERIAL 2" OR LARGER IN ANY DIMENSION.
  - SET TOP OF ROOT BALL 1" TO 2" HIGHER THAN SURROUNDING GROUND.
  - ATTACH COLLAR STRAPS TO THE TREE AT A POINT NOT LESS THAN 50% OF THE HEIGHT OF THE TREE.
  - SPACE ROOT CONTACT FERTILIZER PACKETS EQUALLY AROUND THE BALL OR ROOTS AND SET 5" TO 8" DEEP. PLACE FERTILIZER TABLETS AT THE ROOT ZONE APPROXIMATELY 3" TO 4" DEEP.
  - PROVIDE MATERIALS AND CONSTRUCT AS SPECIFIED IN PUBLICATION 409, SECTIONS 808 AND 809.

**LEGEND**

	PROPERTY LINE
	ACQUIRED RIGHT OF WAY LINE
	LEGAL RIGHT OF WAY LINE
	LIMIT OF GRADING
	100 YEAR FLOODPLAIN
	LIMITS OF INUNDATION
	7-70
	EXISTING CONTOUR
	7-10
	PROPOSED CONTOUR
	SILKY DOGWOOD
	AMERICAN CRANBERRY VIBURNUM

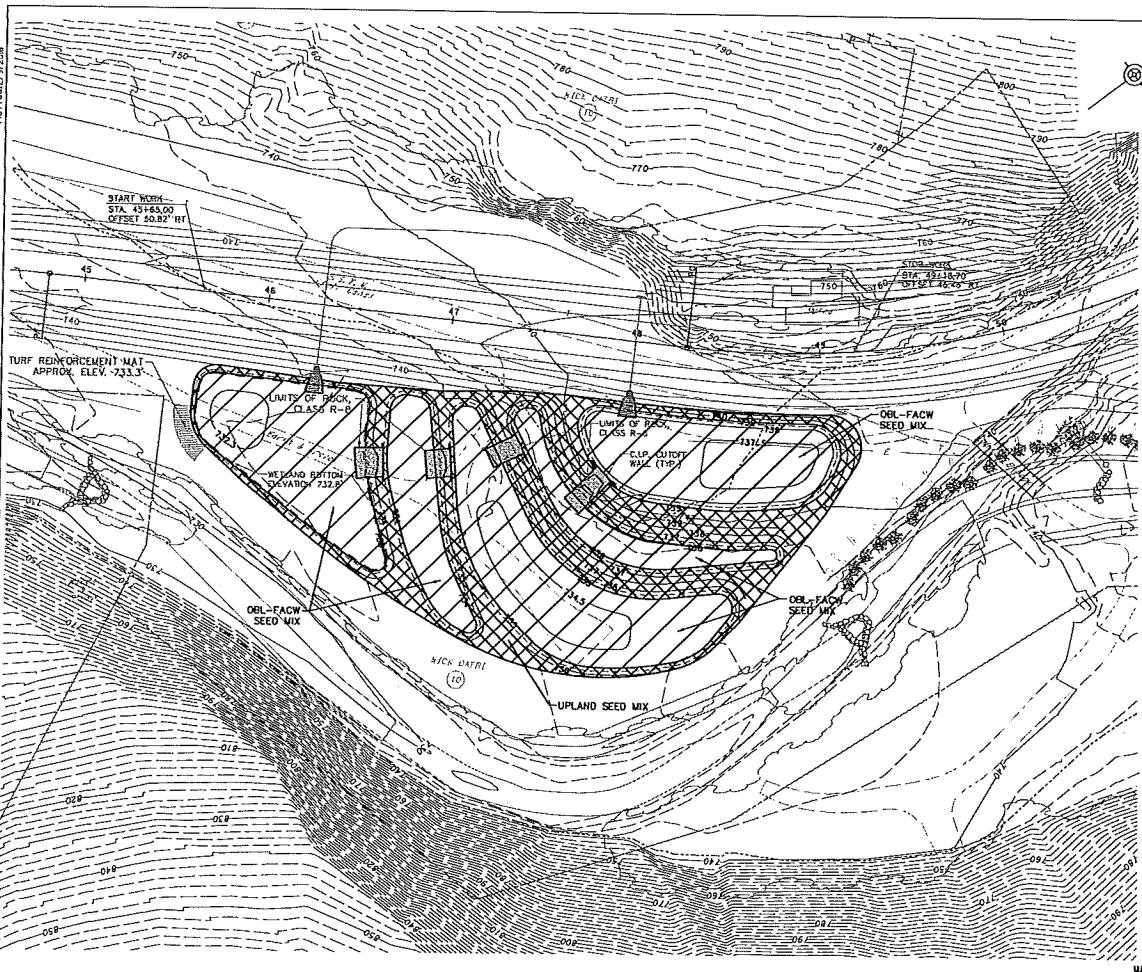


**WETLAND MITIGATION PLAN**

ABBR.	COMMON NAME	SCIENTIFIC NAME	QUANTITY	SIZE / TYPE	SPACING
SD	SILKY DOGWOOD	<i>Cornus amomum</i>	133	3' HT. CONTAINER	3'-5' O.C. WITHIN CLUSTERS OF 5 TO 10 SHRUBS. CLUSTERS SHOULD BE SPACED 7'-9' FROM EDGE OF ADJACENT CLUSTERS.
ACV	AMERICAN CRANBERRY VIBURNUM	<i>Viburnum cerasiifolium</i> var. <i>americanum</i>	98	3' HT. CONTAINER	3'-5' O.C. WITHIN CLUSTERS OF 5 TO 10 SHRUBS. CLUSTERS SHOULD BE SPACED 7'-9' FROM EDGE OF ADJACENT CLUSTERS.

TOTAL SHRUBS: 231 SHRUBS

Portman 2/27/2005  
 Searcher: Issues  
 File: 0102-0028-002 Freedom Road/01020001 Title: Sheet: 08



DISTRICT	COUNTY	ROUTE	SECTION	SHEET
11-0	BEAVER	2004	308	7 OF 11
NEW SEBICKLEY TOWNSHIP				
REVISION NUMBER	REVISIONS			DATE BY

**SEEDING PLAN**

**OBL-FACW - WETLAND SEED MIX**  
APPLIED AT 20 POUNDS PER ACRE

COMMON NAME	SCIENTIFIC NAME	%
POD SEDGE	Carex vulpinoidea	33
VIRGINIA WILDBLUE	Eleocharis virginica	22
LURID (SHALLOW) SEDGE	Carex lyrata	15
POD SEDGE	Carex lupulina	6
DEER-TONGUE GRASS	Diophris ilum. ciliostellatum	4
BLUNT BROOM SEDGE	Carex scoparia	4
GIANT BUR REED	Sparganium angustifolium	4
WANTY LEAVED BURBUSH	Scirpus polyphyllus	4
POD TUSH	Juncus difflusus	3
EASTERN BUR REED	Sparganium angustifolium	3
POD GRASS	Scirpus cyperinus	2
PRICKED SEDGE	Carex stricta	1
BLANDER (STARI) SEDGE	Carex thalassensis	1

**UPLAND SEED MIX**  
APPLIED AT 20 POUNDS PER ACRE

COMMON NAME	SCIENTIFIC NAME	%
LITTLE BLUESTEM	Scirpus ilum. scoparium	32
VIRGINIA WILDBLUE	Eleocharis virginica	20
ALTITUM BENTGRASS	Aporosa perennans	20
DEER-TONGUE GRASS	Diophris ilum. ciliostellatum	7
PURPLE CONEFLOWER	Echinacea purpurea	7
QUEKE SUNFLOWER	Helianthus scaberrimus	5
SMOOTH BLUE ASTER	Aster laevis	5
EARLY GOLDENROD	Solidago luncea	5
WILD BERGAMOT	Monarda filiflora	3
COMMON MILFLEET	Asclepias syriaca	1
GRASSLEAF	Euphorbia corollata	1
GOLDENROD	Solidago sp.	1

- LEGEND**
- - - - - PROPERTY LINE
  - - - - - ACQUIRED RIGHT OF WAY LINE
  - - - - - LEGAL RIGHT OF WAY LINE
  - - - - - LIMIT OF GRADING
  - - - - - 100 YEAR FLOODPLAIN
  - - - - - LIMITS OF INUNDATION
  - - - - - EXISTING CONTOUR
  - - - - - PROPOSED CONTOUR

**SPECIAL PLANT MIXES**

- OBL-FACW SEED MIX
- UPLAND SEED MIX

NOTE: ANY DISTURBED AREA WHICH IS NOT SEEDING WITH A SPECIAL SEEDING MIX, SHALL RECEIVE PENNWOOD FORMULA E MIX.



**WETLAND MITIGATION PLAN**