

DEP E&S Control Plan Technical Review Checklist and FCCD Standard Comments*

Project Name _____ **Permit #** _____

Review Date _____ **Municipality** _____

P = Provided NP = Not Provided NC = Not Checked C = Complies D = Deficient NA = not applicable
X = add comment to review letter

102.4(b) (3) “The Erosion and Sediment Control Plan shall be prepared by a person trained and experienced in erosion and sediment control methods and techniques, and shall be designed to minimize the potential for accelerated erosion and sedimentation”.

_____ The plan preparer’s name, address and phone number not on plan drawings.

_____ The plan designer’s qualifications in preparing erosion and sediment pollution control plans have not been provided in the plan narrative.

102.4(b) (5) (I) “The existing topographic features of the project site and the immediate surrounding area.”

_____ Plan drawing is not legible in all areas.

_____ A plan scale of 1” = 50’ or larger scale has not been provided.

_____ Sheet match lines with overlap have not been provided on the plan drawing.

_____ Existing contour intervals exceed the maximum 2’.

_____ Existing contours have not been provided/identified on the plan drawing.

_____ Existing contour elevations have not been adequately labeled on the plan drawing.

_____ The parcel boundaries have not been provided on the plan drawing.

_____ All landmarks including the type and extent of existing vegetation (ex. tree lines, fencerows, pasture, field boundaries, existing properties, existing right-of -ways and vacant structures) have not been provided on the plan drawing.

_____ All existing Waters of the Commonwealth have not been provided on the plan drawing (ex. including all define bed and banks)

_____ The delineated wetlands boundary has not been provided on the plan drawing. Documentation should be provided to state that a wetland determination was conducted by a qualified consultant.

_____ All existing wetland areas should be clearly shown on the plan map (including those outside the permit [project] boundaries which may be affected by the proposed earthmoving or Erosion and Sediment Pollution Control BMPs).

_____ The 100-year floodway boundary has not been provided on the plan drawing.

_____ The 100-year floodplain boundary has not been provided on the plan drawing.

_____ Sufficient surrounding area has not been provided upslope/downslope of the project boundaries (ex. _____.)

_____ The plan map(s), (*soil map, or location map*) should provide sufficient surrounding area to delineate the watershed areas for all proposed Erosion and Sediment Pollution Control BMPs and to identify all receiving waterways.

_____ The location map has not been provided on the plan drawing.

102.4(b) (5) (ii) "The types, depth, slope, locations and limitations of the soils."

_____ The types, depths, slopes, and locations of all soil types have not been provided on the plan drawing.

_____ A soil survey map has not been provided in the plan narrative.

_____ A soils legend has not been provided on the plan drawing.

_____ Soil limitations (see Franklin County Soil Survey) have not been addressed in the plan narrative (for example:

_____ High water table – dewatering work areas, basins, & traps under construction; establishing vegetation

_____ Shallow depth to bed rock - excavation of basins/traps, trenching silt fence

_____ Rapid permeability/instability – stability of basin/trap berms and road fill

_____ How will you handle the susceptibility of the soils to piping in the area where (*basin number*) is proposed?

_____ The Soil Survey indicates that the soils in the vicinity of proposed sediment basin (*basin number*) are susceptible to slippage (*slide prone, low shear strength, etc.*). Explain how embankment failure will be prevented. Also describe how slumping within the basin (with repeated water level fluctuations) will be avoided.

_____ Soil use limitations are not identified in the Narrative. Please refer to Tables in the NRCS Soil Survey. For each limitation listed by the Soil Survey, briefly describe how it is addressed on the Erosion and Sediment Pollution Control Plan.

_____ The plan does not address the % compaction and maximum lift thickness for compacting fill for any proposed berms, streets, etc.

_____ The soil survey indicates soils with a high water table. The clean out elevation(s) for basin(s)/trap(s)_____ have not been located at or above the high water table elevation to allow for the required dewatering.

_____ Construction techniques or special considerations to address soil limitations to be noted on plan drawing.

Hydric Soils

_____ Since the Franklin County Soil Survey shows hydric soils occurring within the project/permit boundaries, the Conservation District requests that a wetland determination be conducted by a qualified consultant. If wetlands are determined to be present please submit a copy of the wetlands delineation report (<5 years old) and wetland mapping with the revised plans.

_____ Since the Franklin County Soil Survey shows hydric soils occurring within the project/permit boundaries, a note is needed **in bold** on the plan drawing stating, "*There is a high probability that this parcel contains watercourses and/or wetlands which are Waters of the United States regulated by the U.S. Army Corps of Engineers (Corps), Baltimore District, pursuant to Section 404 of the Clean Water Act. Discharges of dredged or fill material, grading, or mechanized land clearing within Waters of the United States, including jurisdictional wetlands, will require a permit from the Corps. This includes watercourses with drainage areas of less than 100 acres. It is highly recommended that a jurisdictional determination (JD and a determination of permit requirements be obtained from the Corps prior to any earthmoving activities. Violations of Section 404 of the Clean Water Act are subject to prosecution by the Attorney General of the United States.*"

_____ If wetlands will be directly impacted, provide copies of any federal permits issued for the proposed impacts and copies of any applications made for other DEP permits and/or permit waivers. If a separate encroachment permit is required for wetlands activity, the final work plan approved for permit must be incorporated into the Erosion and Sediment Pollution Control Plan. Any changes to the Erosion and Sediment Pollution Control Plan as a result of other permits or reviews should be submitted to and approved by this office as plan revisions before implementation begins.

_____ If the wetlands will not be directly impacted by proposed construction operations, the wetland delineation line along with the Erosion and Sediment Pollution Control BMPs that will be installed to protect the wetlands should be clearly shown on the Erosion and Sediment Pollution Control Plan map(s).

102.4(b)(5)(iii) "The characteristics of the earth disturbance activity, including the past, present, and proposed land uses and the proposed alteration to the project site."

_____ The limits of earth disturbance have not been provided on the plan drawing.

_____ The limits of earth disturbance have not included disturbance necessary for ____.

_____ The limits of earth disturbance do not include the areas to be disturbed to make final lawn.

_____ The proposed NPDES permit boundary has not been labeled on the plan drawing or provided on a smaller scale project overview sheet.

_____ The proposed NPDES permit boundary does not include the entire parcel/property boundaries and all offsite right-of-ways (ex. _____).

_____ Since the project proposes 1 acre or more of earth disturbance and a point source discharge to surface waters of the Commonwealth, a NPDES permit is required. See the enclosed application form.

_____ The proposed contours/grades have not been provided on the plan drawing.

_____ Proposed contour intervals exceed the maximum 2'.

_____ The proposed contour elevations have not been adequately labeled on the plan drawing (ex. ____)

_____ The proposed contours do not tie into the existing contours.

_____ Individual lot grades have not been provided on the plan drawing.

_____ Does the site balance? If not, then the plan should address where and how the excess fill material from the project will be disposed of or come from.

_____ The final grades have not been provided for removal/regrading of basin/trap/ channel(s)

Proposed waterways & stormwater management facilities

_____ All proposed stormwater management facilities (ex. stormwater swales, pipes, and inlets) required by the municipality and/or necessary for proper drainage have not been provided on the plan drawing.

_____ An analysis has not been provided demonstrating that the peak discharge of the 10 year 24 hour storm event from the permanent stormwater management basin/storm sewer outfall will not create accelerated erosion (and flooding of any adjacent downstream improvements) from the discharge point to a point at least 150' downstream.

_____ Since earth disturbance is proposed within or along Waters of the Commonwealth and/or within the 100 year floodway the Conservation District requests that a photocopy(s) of any and all required DEP and/or Army Corp of Engineers permits (or) photocopies of all completed permit applications be submitted with the revised plans.

_____ All proposed improvements have not been provided on the plan drawing (ex: ____)

- _____ The lot numbers have not been provided on the plan drawing.
- _____ Phase boundaries have not been provided on the plan drawing.
- _____ The location(s) of the topsoil stockpiles has/have not been provided.
- _____ Adequate BMPs have not been provided for earth disturbance associated with the proposed road widening and/or excavation of offsite utility trenches in right-of-way(s).
- _____ A north arrow has not been provided on the plan drawing.
- _____ All symbols shown on the plan drawing have not been provided in the legend (ex:_____)
- _____ The past (last 50 yrs), present, and proposed land uses have not been provided in the plan narrative.

102.4(b) (5) (iv) “The amount of runoff from the project area and its upstream watershed area.”

Maximum during construction drainage areas

- _____ *Maximum* during construction drainage area(s) for all BMP’s (ex. _____) has (have) not been outlined and labeled *on the plan drawing*. **Technical review of the BMP design can not be completed without correct drainage area(s).**
- _____ The maximum during construction drainage area(s) *acreage* for all facilities has not been labeled on the plan drawing or on a separate drainage area sheet.
- _____ The *maximum* during construction drainage area for _____ is incorrect.
- _____ The entire offsite drainage area to the project has not been provided on the plan drawing or outlined on a separate smaller scale drainage area sheet (or) USGS quad map in the plan narrative.

Peak flow calculations for all channels (see Channels section check for “Q”)

- _____ Worksheet 18 not provided which shows anticipated peak flows for design storms

102.4(b) (5) (v) “The location of waters of the Commonwealth which may receive runoff within or from the project site pursuant to Chapter 93 of this title.”

- _____ The location of the receiving stream(s) or other watercourse(s) has not been provided on the plan drawing or on a copy of a USGS topographic quad map.
- _____ The PA Chapter 93 (Water Quality Standards) receiving stream designation(s) or existing use classification(s) (whichever is greater) has not been included in the plan narrative.

102.4(b) (5) (VI) “A written depiction of the location and type of perimeter and on-site BMP’s used before, during, and after the earth disturbance activity.”

- _____ Show perimeter controls for the entire downslope area of the project during all stages and phases of construction. Perimeter BMPs have not been provided for _____
- _____ What control measures will be used for earth disturbance activities associated with any proposed wetland mitigation areas?
- _____ What controls will be used for any in-stream work or wetland crossing?
- _____ The construction sequence does not provide adequate perimeter BMPs for earth disturbance associated with the required initial clearing and grubbing of existing vegetation (ex. trees & brush).

- _____ The construction sequence does not provide perimeter BMPs for the cut/fill required for the installation of _____
- _____ Perimeter BMPs have not been provided at the proposed storm sewer outfall located _____
- _____ The construction sequence does not address installation of earthen, stone, and asphalt inlet berms until the streets receive the final wearing course.
- _____ How will sediment laden water get to perimeter facilities? The plan does not provide BMPs for rough-graded streets and disturbed areas up slope of the streets prior to the inlets being installed and becoming functional.

102.4(b) (5) (vii) “A sequence of BMP installation and removal in relation to the scheduling of earth disturbance activities, prior to, during and after earth disturbance activities.”

- _____ A standard note is needed on the plan drawing and/or detail sheet(s) stating, *“A copy of the approved erosion and sediment control plan must be available at the project site at all times.”*
- _____ A standard note is needed at the beginning of the construction sequence stating, *“At least 7 days before starting any earth disturbance activities, the owner and/or operator shall invite all contractors involved in those activities, the landowner, all appropriate municipal officials, the erosion and sediment control plan preparer, and a representative of the Franklin County Conservation District to an on-site pre-construction meeting.”*
- _____ A standard note is needed at the beginning of the construction sequence stating, *“At least 3 days before starting any earth disturbance activities, all contractors involved in those activities shall notify the Pennsylvania One Call System Incorporated at 1- 800-242-1776 for the location of existing underground utilities.”*
- _____ A standard note is needed at the beginning of the construction sequence stating, *“All earth disturbance activities shall proceed in accordance with the following sequence. Each stage shall be completed and immediately stabilized before any following stage is initiated. Clearing, grubbing and topsoil stripping shall be limited only to those areas described in each stage.”*
- _____ A standard note is needed at the beginning of the construction sequence stating, *“Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the operator shall implement appropriate best management practices to eliminate the potential for accelerated erosion and/or sediment pollution.”*
- _____ A standard note is needed at the beginning of the construction sequence stating, *“All pumping of sediment laden water shall be through a sediment control BMP, such as a pumped water filter bag or equivalent sediment removal facility, over undisturbed vegetated areas.”*

Complete and site-specific sequence of BMPs installation

- _____ A detailed construction sequence should be provided. The sequence should be a step-by-step outline of the proposed project indicating what specific BMPs will be installed prior to each stage of construction. It should also describe the conditions of stabilization that will be achieved prior to removal of temporary BMPs. complete, detailed, site-specific construction sequence including installation and removal of all Best Management Practices (BMPs) during each stage of construction has not been provided.
- _____ The construction sequence does not address stripping, stockpiling, installing silt fence and stabilization of the topsoil. Stockpiles should not exceed 35 feet in height and side slopes need to be 2:1 or flatter.
- _____ Special Protection BMPs have not been proposed (ex. _____). See E&S Manual.
- _____ BMPs have not been shown on the plan drawing per stage _____ of the construction sequence.

- _____ A separate detailed construction sequence has not been provided for the in-stream work associated with _____
- _____ Earth disturbance is occurring prior to installation of the proposed BMPs (ex. _____)
- _____ The construction sequence does not address placement of excess material excavated for construction of sediment basin(s) _____ in an area with adequate BMP's installed and limited area of disturbance.
- _____ The construction sequence does not address where the material will come from to construct basin(s) _____ berm(s).
- _____ The construction sequence does not address installation of _____
- _____ The construction sequence does not address installing a compacted stone base over the entire length of the driveway and stabilizing the disturbed areas on both sides of the driveway immediately upon completion of grading.
- _____ BMPs have not been provided for rough-graded street(s) down slope of the proposed broad-based dip(s)/inlet berm(s).
- _____ The construction sequence does not address when rough-grading of the lots will take place.
- _____ On-lot BMPs should not be the primary BMP for higher density residential subdivisions.
- _____ On-lot BMPs should only be provided as a secondary BMP to minimize sedimentation to roadways, sidewalks, and neighboring downslope lots/properties. Please provide specific on-lot scenarios and sequence for each lot, including a list of lot numbers with each scenario.
- _____ The construction sequence does not address BMP's to be utilized during individual lot construction to protect down slope properties and minimize sediment discharge onto streets.
- _____ The construction sequence does not address adequate BMPs for excavation of all utility trenches (ex. _____). The Conservation District suggests placing spoil material on the up slope side of the trench, limiting the length of open trench to that which will be backfilled the same day, immediately stabilizing, and immediately repairing any affected BMP's. See page 125 of the March 2000 E&S Manual.
- _____ The construction sequence does not address replacing topsoil and stabilization of all disturbed areas upon completion of the streets, curbs, and utilities and prior to individual lot construction.
- _____ The construction sequence does not address immediate **temporary** or **permanent** stabilization of the _____.

Activities planned to limit exposed areas

- _____ The construction sequence does not address field-marking all limits of disturbance, Waters of the Commonwealth boundaries (ex. stream buffers, wetland boundaries, spring seeps, and floodway) prior to proposed earth disturbance.
- _____ The construction sequence does not address field-marking the limits of disturbance.
- _____ The construction sequence does not address field-marking all limits of disturbance within the interior of the site (ex. any steep slopes, infiltration areas and trees selected to be saved).
- _____ Appropriate BMPs (including perimeter controls and temporary stream crossings) should be installed and functioning prior to general site clearing and grubbing operations. Describe those BMPs.
- _____ What is the duration and extent of the disturbance for each stage? Should be addressed in sequence.

Removal of temporary BMPs

- _____ The construction sequence does not address removal and proper disposal/recycling of the BMPs.

_____ The BMPs may not be removed until a minimum uniform 70% perennial vegetative cover is well-established across the entire upslope project drainage area. All parking lots, driveways, and streets must be paved or have a compacted stone base in place.

_____ The construction sequence does not define “permanent stabilization.” Permanent stabilization should be defined as *“a minimum uniform 70% perennial vegetative cover or other permanent non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.”*

_____ The construction sequence does not address how and when the lot(s) proposed in the location off sediment basin/trap(s) _____ will be completed and what BMP’s will be used for construction of the lot(s).

_____ The construction sequence does not adequately address BMPs for conversion of the sediment basin to a permanent stormwater management basin. When the temporary riser must be removed to allow for establishment of the permanent grass cover, the Conservation District suggests that: 1) a minimum 2’ high horseshoe-shaped stone filter berm be installed around the permanent outlet structure with permanent seeding and straw-mulching (or) installation of an erosion control blanket with permanent seeding over the entire interior of the basin. Sediment basins should not be converted to the permanent stormwater management basin during non-germinating periods. All sediment deposited within storm sewers should be removed prior to converting the sediment basin.

_____ The permanent stormwater management basin concrete low flow channels/ infiltration trenches may not be installed in basin(s) until the entire drainage area is permanently stabilized and the basin is in the process of being converted to the permanent stormwater management facility.

_____ The construction sequence does not address repair and permanent stabilization of the areas disturbed during removal of the temporary BMP’s.

_____ A standard note is needed at the end of the construction sequence stating, *“Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operators shall contact the Franklin County Conservation District for a final inspection prior to the removal of the BMP’s.”*

Installation of PCSM BMPs

_____ The construction sequence does not address installation & stabilization of all Post Construction Stormwater Management (PCSM) BMPs shown on the PCSM plan.

_____ The construction sequence does not address avoiding compaction of proposed post construction stormwater infiltration areas.

_____ The construction sequence does not address the installation of sediment control BMPs to keep sediment from clogging the post construction stormwater infiltration BMPs and/or underground storage facilities.

_____ The construction sequence proposes the PCSM BMPs to be installed prior to permanent stabilization of the upslope drainage area (ex. _____).

_____ Details for each BMP noted on Section E, operation and maintenance information not shown on the PCSM plan drawing.

Other

102.4(b) (5) (viii) "Supporting calculations"

Channel Capacity & freeboard calculations

- _____ For vegetated channels the Erosion and Sediment Pollution Control Program Manual requires separate calculations showing sufficient capacity and adequate protection both before and after establishment of the vegetation.
- _____ The Erosion and Sediment Pollution Control Program Manual requires that wherever channels encounter significant changes in slope, they should be broken into segments for design purposes or use the minimum slope within each reach to determine channel depth and the maximum slope to determine the anticipated velocity or shear stress.
- _____ Channel design information (Standard Worksheets #18 & #21) has not been provided for channel(s)
- _____ The channel design information in the plan narrative is inconsistent with the channel detail provided for channel(s).
- _____ The channel design software program does not provide all the required channel design information. Please provide completed Standard Worksheets #18 & 21 for both temporary and permanent channel conditions.
- _____ Channel(s) ___ does/do not provide the required discharge capacity. If an alternative design method is used the standard worksheets for that method must be provided (ex. Rational Method – Standard Worksheets 19 & 20).
- _____ A check of the channel design information provided revealed that the Manning's "n" value is incorrect for vegetated channel(s) _____ (See Figure 3B – page 29 of E&S Manual).
- _____ The Erosion and Sediment Pollution Control Program Manual requires that channels having steep bed slopes (≥ 0.10 ft/ft) should be analyzed for shear stress. Please provide calculations to show that all channels with a slope of greater than 10% meet shear stress limitations
- _____ The long term manufacturer's specifications (ex. Manning's N, allowable velocity & shear stress) have not been provided in the narrative for all proposed channel linings.
- _____ Temporary and permanent lining design information (Standard Worksheet #21) has not been provided for channel(s).
- _____ The design velocity for channel(s) _ exceeds the permissible velocity for the proposed **temporary** or **permanent** lining.
- _____ The design shear stress for channel(s) ___ exceeds the permissible shear stress for the proposed **temporary** or **permanent** lining.
- _____ The design discharge capacity provided for **temporary** or **permanent** channel(s) is inadequate.
- _____ The minimum 6" freeboard has not been provided for channel(s)
- _____ Flow width to depth ratios exceeding 12:1 is not realistic. Under these conditions, the flows tend to concentrate within the channel. Revise the dimensions of (*indicate channels*) so that the flow width to depth ratios are less than 12:1.

Basin Capacity information

- _____ The total storage capacity provided for sediment basin(s) _ is inadequate.
- _____ All sediment basin(s) ___ storage information (Standard Worksheets #12, 13, & 14) has not been provided in the plan narrative.

- _____ The minimum 1,000 cu. ft. of sediment storage per disturbed acre has not been provided for sediment basin(s).
- _____ Sediment basin(s) ___ sediment storage is inadequate. The required sediment storage needs be calculated based on the total number of acres disturbed over the life of the project.
- _____ The minimum 1 foot of sediment storage has not been provided for sediment basin(s) _____.
- _____ The minimum 3600 cu. ft. per acre settling volume has not been provided for sediment basin(s) _____.
- _____ Sediment basin(s) ___ surface areas (at each contour elevation) provided on the plan drawing are inconsistent with the surface areas provided in the narrative stage storage information.
- _____ Sediment basin(s) ___ surface area at the temporary riser crest elevation has not been provided on Standard Worksheet #14.

Basin Discharge calculations

- _____ The discharge capacity provided for sediment basin(s) ___ is inadequate. Minimum 2cfs/acre discharge is required.
- _____ The discharge information (Standard Worksheet #12 &17) for sediment basin(s) ___ has/have not been provided in the plan narrative.
- _____ The calculations used to determine the discharge capacity of the permanent concrete outlet structure(s) for sediment basin(s) ___ have not been provided.
- _____ Channel design information (capacity & protective lining) for sediment basin(s) emergency spillway channel (on outside slope of the basin berm) has/have not been provided in plan narrative.

Basin Dewatering calculations

- _____ The dewatering information (Standard Worksheets 15 & 16) for sediment basin(s) ___ has not been provided.
- _____ The dewatering information does not provide for dewatering of sediment basin(s) ___ settling volume from the crest of the temporary riser down to the required sediment-storage (clean-out) elevation within the required 2 to 7 day time frame (or) **4 to 7** day time frame.
- _____ Sediment basin(s) ___ riser dewatering perforations may not be placed below the required sediment-storage (clean-out) elevation unless designed as a dry basin (see Figure 10 E&S Manual).
- _____ Using the basin dewatering Rule of Thumb (maximum drainage area / 0.785 = number of 1" diameter perforations equally spaced vertically along the riser starting at the clean out elevation) the number and/or spacing of perforations provided on the basin riser detail is incorrect.
- _____ The discharge of the sediment basin riser dewatering perforations may not be included in the required 2 cfs/ac. discharge.

Trap Capacity Information

- _____ The total storage capacity provided for sediment trap(s) _____ is inadequate.
- _____ The minimum 2' storage depth has not been provided for sediment trap(s) _____.
- _____ The minimum 1' sediment storage depth has not been provided for sediment trap(s) _____.
- _____ Stage storage information for sediment trap(s) _____ has not been provided in the plan narrative.

_____ Sediment trap(s) ___ surface area at the temporary riser crest elevation has not been provided on Standard Worksheet #14.

Trap Discharge Calculations

_____ The discharge capacity provided for riser sediment trap(s) ___ is inadequate (minimum 1.5 cfs per acre required).

_____ Riser sediment trap(s) ___ discharge information has not been provided in the plan narrative.

_____ Riser sediment trap(s) ___ top of berm does/do not provide for required 1' freeboard above the 1.5 cfs/ac. discharge elevation.

Outlet Design Calculations

_____ Complete outlet protection design calculations (Standard Worksheet 23 and Figures 21 or 22) for all pipe discharge points have not been provided in the plan narrative.

_____ An analysis has not been provided at outfall demonstrating that the peak discharge of the 10 year 24 hour storm event from will not create accelerated erosion (and flooding of any adjacent downstream improvements) from the discharge point to a point at least 150' downstream.

102.4(b) (5) (ix) "Plan Drawings"

CHANNELS (pages 16-39 of E&S Manual)

_____ Diversion channel(s) does not outlet to a stable area.

_____ Diversion channel(s) is not located up slope of all proposed disturbance.

_____ Collector channel(s) is not located down slope of all proposed disturbance.

_____ Channel(s) is shown on top of proposed fill. Adequate perimeter BMP's have not been provided prior to placement of fill and completion of channel(s).

_____ Channel(s) run(s) through an area of proposed improvements.

_____ Proposed contours/grades have not been provided for channel/berm(s) _____.

_____ Channel(s) ___ bed slope is less than the minimum 1%. Please note collector channels with very flat slopes tend to accumulate sediment; fallen leaves & woody debris; and construction debris during construction resulting in the reduction of the required channel capacity and increased maintenance.

_____ Channel/stormsewer outfall(s) ___ does/do not extend to the bottom elevation of basin/trap(s) ___ and at least 10 feet beyond the toe of slope.

_____ Channel(s) ___ bed slope on the plan drawing is inconsistent with the bed slope provided in the channel design information provided.

_____ The Erosion and Sediment Pollution Control Program Manual requires that wherever channels encounter significant changes in slope, they should be broken into segments for design purposes or use the minimum slope within each reach to determine channel depth and the maximum slope to determine the anticipated velocity or shear stress.

CHANNEL DETAILS

- _____ Channel cross-section details (Standard Construction Details #1 & #2) have not been provided on the plan detail sheet(s) for channel/berm(s) .
- _____ The channel cross-section detail provided is inadequate (ex.____.)
- _____ The lining has not been shown extending to the top of the channel side slopes
 - _____ The total depth has not been provided
 - _____ The bottom width has not been provided
 - _____ The top width has not been provided
 - _____ The side slopes have not been provided
 - _____ The type of lining has not been provided
 - _____ The rock-lined channel detail does not provide the depth of excavation required for proper placement of the rock lining.
 - _____ The minimum channel(s) rip-rap thickness is not 1.5 times the maximum stone size (dmax).
 - _____ The rock-lined channel detail underlying geotextile fabric has not been shown.
- _____ A standard channel maintenance note is needed with the channel cross-section detail stating, “*All channels must be kept free of obstructions such as fill ground, fallen leaves & woody debris, accumulated sediment, and construction materials/wastes. Channels should be kept mowed and/or free of all weedy, brushy or woody growth. Any underground utilities running across/ through the channel(s) shall be immediately backfilled and the channel(s) repaired and stabilized per the channel cross-section detail.*”
- _____ A standard channel installation note is needed with the channel cross-section detail stating, “*Vegetated channels shall be constructed free of rocks, tree roots, stumps or other projections that will impede normal channel flow and/or prevent good lining to soil contact. The channel shall be initially over-excavated to allow for the placement of topsoil.*”
- _____ The channel cross-section details are inconsistent with the cross-section details provided in the plan narrative
- _____ Channel(s) (with a drainage area of 1acre or more) should not be less than 1 foot total depth for practical considerations (ex. ease of construction and buildup of sediment, sod, leaves and other debris).
- _____ Channel(s) has/have not been provided with an adequate temporary lining.
- _____ The manufacturer’s installation detail(s) and instructions for the proposed channel lining(s) have not been provided on the plan detail sheet(s).
- _____ The manufacturer’s installation detail(s) appears to be incomplete.
Ex: _____ Trenched in _____ Staple pattern _____ Overlap

Channel Outlet

- _____ Channel(s) has/have not been provided with adequate outlet protection.
- _____ There does not appear to be sufficient room to construct the proposed (*specify riprap apron, outlet basin, etc.*) at the location shown on the plan map. Either verify that this structure can be constructed at the location shown or make the necessary corrections.
- _____ The Erosion and Sediment Pollution Control Program Manual indicates that rock filters are not an acceptable substitute for an appropriate protective channel lining. Revise the design of (*channel number[s]*) to provide suitable protective lining and remove the rock filters.
- _____ Due to the length and steepness of slope, a level spreader is not a suitable outlet for (*identify channel number[s]*).

- _____ All areas of concentrated flows (for example, stormwater swales) need to have a temporary erosion control blanket installed immediately upon completion of final grade. The Conservation District suggests placing a note on the plan drawing and highlighting the areas to be blanketed.
- _____ Proposed contours, construction detail and temporary/permanent design information has not been provided for all channels with a drainage area of 1 acre or more. All channels must have a temporary lining prior to establishment of permanent grass cover.
- _____ A construction detail and temporary erosion control blanket has not been provided for all channels with a drainage area < 1 acre.
- _____ Channel(s) can not be constructed to the dimensions provided due the location of existing/proposed improvements obstructing the area necessary for the required channel(s) top width.
- _____ An adequately sized pipe and clean rock fill or other stable crossing has not been provided for equipment access across channel(s) .
- _____ Explain how (*specify channel number*) will remain functional during installation of (*identify sewer or utility line*).

Other

SEDIMENT BASINS (pages 40-63 of E&S Manual)

- _____ Sediment basin(s) may not be located within Waters of the Commonwealth.
- _____ Sediment basin(s) has/have not been located down slope all proposed disturbance.
- _____ Sediment basin(s) clean out elevation is lower than the adjacent wetland, spring seep, stream, pond elevation. The plan needs to address how a constant discharge will be eliminated from the lowest row of dewatering perforations.
- _____ Sediment basin(s) principal and/or emergency spillway discharge does not extend to waters of the Commonwealth, an adequately-sized stable channel, or an adequately-sized storm sewer.
- _____ An analysis has not been provided for basin(s)/traps demonstrating that the greater of the 2 cfs. /acre sediment basin discharge (or) the peak discharge of the 10 year 24 hour storm event from the permanent stormwater management basin will not create accelerated erosion (and flooding of any adjacent downstream improvements) from the discharge point to a point at least 150' downstream. Photographs of the discharge area may be helpful to the plan reviewer.
- _____ Provide calculations showing that the discharge from (*indicate sediment basin number*) will be safely conveyed to a natural waterway without causing erosion.
- _____ Provide supporting evidence that the roadside ditch to which (*basin number*) discharges has sufficient capacity to handle the additional flow due to the basin discharge without flooding the roadway. Also show that the ditch has a suitable lining so that accelerated erosion will not result.
- _____ Please submit a photocopy of the PA DEP General Permit-4 for Intake & Outfall Structures or a photocopy of the completed permit application for basin(s) outfall(s).

_____ The existing/proposed ground elevation at the end of sediment basin barrel will not allow for positive drainage of the basin.

_____ Sediment basin(s) may not outlet to another sediment basin.

_____ How will basins be accessed to be able to maintain and/or convert the basin.

Basin Complete berm & outlet detail

_____ Complete basin berm and outlet details (Standard Construction Details #3, 4, 5, & 6) for sediment basin(s) ___ have not been provided on the E&S plan detail sheets.

_____ The required 2' freeboard above the 2cfs/acre flow elevation has not been provided for sediment basin(s).

_____ The basin berm and outlet details (see Standard Construction Details #3, 4, 5 & 6) provided for sediment basin(s) ___ are inadequate. (For example, _____)

_____ Minimum 8' top of berm width has not been provided

_____ Top of berm elevation not provided

_____ Side slopes not provided ($Z1 + Z2 > \text{ or } = 5$, no steeper than 2:1)

_____ Key trench not provided

_____ Clay core not provided

_____ Anti-seep collars including # and dimensions have not been provided

_____ Emergency spillway crest is not minimum 6" above the temporary riser crest elevation

_____ A note has not been provided indicating watertight seals on all joints and connections.

_____ A note has not been provided indicating that all permanent riser orifices below the temporary riser crest elevation will be sealed watertight

_____ Temporary riser diameter and/or type of material not provided (min. 15")

_____ The riser diameter is not 1.25X the barrel diameter.

_____ Temporary riser crest elevation not provided

_____ Clean out elevation not provided

_____ Basin bottom elevation not provided

_____ The permanent riser detail has not been provided

_____ Number of holes per row and the vertical spacing between rows not provided

_____ The permanent riser crest elevation has not been provided

_____ The permanent riser has not been extended to the temporary riser crest elevation

_____ The permanent riser opening length and width have not been provided

_____ The concrete riser base & dimensions have not been provided

_____ Trash rack & anti-vortex details & dimensions have not been provided for the permanent and/or temporary risers

_____ The permanent riser/outlet structure grate has been shown. DEP requires the grate to be temporarily removed until the sediment basin is converted to the permanent stormwater management basin.

_____ Barrel diameter and/or type of material not provided (min. 12")

_____ Barrel length not provided

_____ Barrel inlet invert and/or outlet invert elevation not provided

_____ Temporary stub barrel diameter and/or material has not been provided

_____ Temporary stub barrel length has not been provided

_____ The correct number of 1" dewatering perforations at each elevation has not been provided

_____ A standard basin installation note is needed with the basin berm detail stating, "*Fill material for the embankments shall be free of roots, or other woody vegetation, organic material, large stones, and other objectionable materials. The embankment shall be compacted in maximum _____" layered lifts at _____% density.*"

_____ A sediment basin maintenance note is needed with the basin berm detail stating, "*Sediment basins shall be kept free of all trash, concrete wash water and other debris that pose the potential for clogging the basin outlet structures and/or pose the potential for pollution to Waters of the Commonwealth.*"

_____ A sediment basin dewatering facility detail (Standard Construction Detail #10) has not been provided.

- _____ The top opening of the permanent riser should not be sealed off. The Conservation District recommends extending the riser with a watertight open-top plywood box.
- _____ Please submit a photocopy of required PA DEP dam permit or a photocopy of the completed permit application for sediment basin ___ with a water storage level of 15 feet or more.
- _____ Sediment basin(s) ___ elevation(s) on the construction detail is/are inconsistent with the elevation(s) provided on the plan drawing and/or in the plan narrative.
- _____ Clean out marker locations have not been provided on the plan drawing halfway between all incoming channels/berms/storm sewer pipes and the basin outlet structure for sediment basin(s).
- _____ A clean out marker detail has not been provided for sediment basin(s) on the plan detail sheets.
- _____ A standard note is needed with the clean out marker detail stating, "*When sediment has accumulated to the clean out elevation on any stake, all accumulated sediment shall be removed from the entire basin bottom.*"
- _____ The clean out elevation(s) provided on the construction detail for sediment basin(s) is/are inconsistent with the clean out elevation(s) provided in the plan narrative.

Emergency Spillway

- _____ An emergency spillway has not been provided for sediment basin(s) __. All sediment basins must have a minimum 8' bottom width and 1' deep stable emergency spillway (assume 6" flow depth).
- _____ The emergency spillway details for sediment basin(s) ___ have not been provided on the plan detail sheets.
- _____ The emergency spillway details (Standard Construction Details #8) (crest & channel) for sediment basin(s) are inadequate (ex. _____).
 - _____ 5' minimum width earthen plug
 - _____ Lining not trenched in
 - _____ Underlying geotextile not provided
 - _____ Crest not minimum 6" above the riser crest
 - _____ Side slopes not provided
 - _____ Weir section with all dimensions not provided
 - _____ Outside embankment channel section with all dimensions not provided
 - _____ Outlet dissipater with all dimensions not provided
- _____ The proposed channel grading for basin(s) emergency spillway(s) has not been shown or labeled on the plan drawing.
- _____ The emergency spillway(s) for sediment basin(s) _ constructed on fill material does/do not have an adequate riprap or other adequate permanent protective lining (for example, turf reinforcement mat).

18" deep permanent pool

- _____ Sediment basin(s) ___ does not provide an 18" (or greater) average deep permanent pool below the required sediment-storage (clean-out) elevation.

Skimmer

- _____ Sediment basin(s) ___ does (do) not skim water from the top 6" of the dewatering zone.
- _____ A skimmer detail has not been provided for sediment basin(s) _____.
- _____ Sediment basin(s) __skimmer detail(s) is/are inadequate (ex. _____).
 - _____ Orifice size not provided

- _____ Arm length not provided = $1.41 \times (2 \text{ cfs elevation} - \text{skimmer stub invert elevation})$
- _____ Arm diameter not provided
- _____ Flexible pipe not provided
- _____ Watertight connections not provided
- _____ Stone berm to prop skimmer at clean out elevation not provided
- _____ Skimmer rope not provided
- _____ Skimmer stub invert elevation not provided (should be lower than cleanout elevation)
- _____ Skimmer stub barrel length (max. 1') not provided
- _____ Manufacturer not specified (Faircloth holds patent)
- _____ The detail provided is not a Faircloth skimmer
- _____ Maintenance notes have not been provided

_____ The manufacturer's specifications and design information have not been provided on the plan drawing and in the narrative for sediment basin(s) skimmer dewatering device.

_____ A standard note is needed with the skimmer construction detail stating, "Approval of the use of skimmer(s) does not approve use of any skimmer(s) in violation of any patent, patent rights, and/or patent laws."

Basin Flow length

_____ Sediment basin(s) ___ does (do) not provide the required flow length to basin width ratio of 2:1 or greater. To calculate the minimum 2:1 flow length multiply 1.41 by the square root of the surface area at the temporary riser crest elevation.

_____ Sediment basin(s) ___ does not provide the necessary flow length to basin width ratio of 4:1 or greater. To calculate the required 4:1 flow length multiply 2.0 by the square root of the surface area at the temporary riser crest elevation.

_____ An adequate sediment basin baffle detail has not been provided on the plan detail sheets (ex. _____).

- _____ 7' or TRCE
- _____ Trenched in 1'
- _____ Marine grade plywood material not provided
- _____ Type of geotextile not provided
- _____ Chainlink fencing not provided for geotextile baffle
- _____ Not tied into embankment on one side (if applicable)
- _____ Not capable of standing up to high velocity flows at end of pipes/ channels

_____ The location of the baffles does not allow for sediment clean out between the baffles.

_____ The permanent low flow channels located in the basin(s) need to be removed from the E&S plan drawing.

Structurally sound

_____ A note is needed stating, "Sediment basins must be protected from unauthorized acts of third parties" on the plan drawing.

_____ The plan does not address compacting sediment basin(s) ___ berm(s) in layered lifts.

SEDIMENT TRAPS (pages 64-69 of E&S Manual)

_____ The drainage area to sediment trap(s) ___ exceeds 5.0 acres, the maximum permissible.

_____ Sediment trap(s) ___ outlet does not extend to waters of the Commonwealth, an adequately-sized stable channel, or an adequately-sized storm sewer.

_____ An analysis has not been provided demonstrating that the greater of the sediment trap discharge (1.5 cfs/acre) or the peak discharge of the permanent stormwater facility from the 10 year/ 24 hour storm event will not create accelerated erosion of the downstream area.

_____ Sediment trap(s) ___ has/have not been located down slope of all proposed disturbance.

_____ Sediment trap(s) ___ may not outlet to another sediment trap.

Trap Complete berm & outlet details

_____ Complete sediment trap berm and outlet details (Standard Construction Details # 11-14) for sediment trap(s) ___ have not been provided on the plan detail sheets.

_____ Sediment trap berm and outlet detail(s) (Standard Construction Details # 11-14) provided for sediment trap(s) ___ is/are inadequate (ex. _____).

_____ Min. 5' top width not provided

_____ Top of berm not minimum 1 foot above stone outlet crest

_____ 1 dewatering perforation per vertical foot of riser above the clean out elevation not provided

_____ Trash rack & anti-vortex details & dimensions have not been provided for the permanent and/or temporary risers

_____ The permanent riser/outlet structure grate has been shown. DEP requires the grate to be temporarily removed until the sediment trap is converted to the permanent stormwater management basin.

_____ Anti-seep collars not provided

_____ R-3 min. / min 6" of max #57 filter stone/filter cloth not provided

_____ Side slopes are steeper than 2:1

_____ Stone outlet width not = 2 x # of drainage acres or 2 x spillway crest height whichever is greater

_____ Stone outlet width not = 6 x # of drainage acres

_____ Sediment trap(s) _____ embankment height exceeds the maximum 5' allowable.

_____ A standard trap installation note is needed with the trap berm detail stating, "*Fill material for the embankments shall be free of roots, or other woody vegetation, organic material, large stones, and other objectionable materials. The embankment shall be compacted in maximum ___?___" layered lifts at ___?___% density.*"

_____ A sediment trap maintenance note is needed with the trap berm detail stating, "*Sediment traps shall be kept free of all trash and other debris that pose the potential for clogging the trap outlet structures and pose the potential for pollution to Waters of the Commonwealth.*"

_____ Sediment trap(s) _____ elevation(s) provided on the construction detail is/are inconsistent with the elevation provided on the plan drawing and/or in the plan narrative.

Trap Clean out information

_____ Clean out marker locations have not been provided on the plan drawing halfway between all incoming channels/berms/storm sewer pipes and the trap outlet structure for sediment trap(s) _____.

_____ A standard note is needed with the clean out marker detail stating, "*When sediment has accumulated to the clean out elevation on any stake, all accumulated sediment shall be removed from the entire trap bottom.*"

_____ A clean out marker detail has not been provided for each sediment trap on the plan detail sheets.

Trap Flow length

_____ Sediment trap(s) ___ does/do not provide the minimum flow length to trap width ratio of 2:1 or greater. The minimum length of flow through a trap is 10'. To calculate the minimum 2:1 flow length multiply 1.41 by the square root of the surface area at the temporary riser crest elevation.

_____ Sediment trap(s) Standard Worksheet #8 has not been provided in the plan narrative.

SILT FENCING (pages 86-91 of E&S Manual)

_____ The location of the silt fence per stage #_____ has not been provided on the plan drawing.

_____ The silt fence located _____ has not been shown within the limits of disturbance.

_____ The silt fence type has not been provided for the silt fence located _____.

_____ The plan drawing does not show the silt fence placed at the toe of the fill slope above the end of the pipe and/or tying into the sides of the pipe or headwall.

_____ The silt fence has not been shown down slope of all proposed disturbance.

_____ The silt fence has not been shown at least 8 feet from the toe of the fill slope.

_____ The silt fence located _____ is proposed in an area(s) of concentrated flow, rocky soils.

_____ The proposed silt fence is inadequate. The existing and/or proposed slope length draining to the silt fence exceeds the maximum allowable slope length for the percent slope provided. (See Table 18 and 19 of E&S Manual)

_____ Multiple rows of silt fence may not be placed across the slope to break up the slope length.

_____ The silt fence has not been shown parallel to the existing contours/grades.

_____ The plan drawing does not show the silt fence end sections extended 8' upslope at 45 degrees to the main silt fence alignment.

Complete details

_____ The silt fence detail has not been provided.

_____ The silt fence detail provided is inadequate (See Standard Construction Details #19, 20, & 21) (ex.).

- _____ Correct fabric height not shown
- _____ Stake spacing not shown
- _____ Stakes not shown on down slope side
- _____ Stakes/posts type and size not shown
- _____ Stakes not shown minimum 18" in ground
- _____ Reinforcing mesh not shown
- _____ Minimum 10 gauge reinforcement wire not shown
- _____ Fabric not trenched in 6" deep by 6" wide trench
- _____ Compacted backfill not shown
- _____ Installation & maintenance notes not provided
- _____ Type and spacing of fasteners not shown
- _____ No. 7 Ga. tension wire not shown

_____ The silt fence detail does not show the end sections being wrapped together and stapled.

Rock Filter Outlet Repair detail

_____ The rock filter outlet (Standard Construction Detail #18) detail for silt fence blow out repair has not been provided on the plan detail sheets.

_____ The rock filter outlet (see Standard Construction Detail #18) detail provided is inadequate (ex. _____).

- _____ Minimum 6" of #57 filter stone not shown
- _____ R-3 rock not shown

- _____ Rock filter height not shown
- _____ Rock filter height is not 5/6th height of silt fence
- _____ Minimum 1' overlap with silt fence not shown
- _____ Maintenance note not provided.

_____ Rock filters may not be shown on the plan drawings. Rock filters should only be used when silt fence has failed due to unanticipated concentrated flows.

OUTLET PROTECTION (pages 111-124 of E&S Manual)

- _____ Adequate outlet protection has not been provided at all pipe discharge points.
- _____ All pipe discharge points have not been labeled/identified on the plan drawing.
- _____ Adequate pipe outlet protection has not been provided at the pipe outlet(s) located in sediment basin(s)/trap(s).
- _____ Is there sufficient room to construct all the proposed structures (ex: wing walls, energy dissipaters, etc) for each outlet?

Outlet Complete Details

- _____ Outlet protection details (Standard Construction Detail #33 or Figure #23) have not been provided for all pipe discharge points and/or diversion channel outlet(s).
- _____ The rock apron detail provided is inadequate (See Standard Construction Detail #33) (ex:_____).
 - _____ 0% level bottom not provided
 - _____ Rock not extended up side slopes
 - _____ Rock size not provided
 - _____ Velocity exceeds maximum allowable for rock size provided
 - _____ All required dimensions not provided
 - _____ Min. depth not = to dmax
- _____ The stilling basin detail provided is inadequate (See Figure 23 pages 97 & 98 of E&S Manual) (ex:_____).
 - _____ Rock size not provided
 - _____ All required dimensions not provided

Level Spreaders page 97-99 of manual

- _____ The level spreader detail provided is inadequate (See Standard Construction Detail #25) (ex:_____).
 - _____ Lip protected with a permanent turf reinforcement mat or concrete curbing
 - _____ Total depth (6 inches min)
 - _____ 6 foot width
 - _____ 0% grade
- _____ Maximum drainage area for level spreader is 5 acres.
- _____ Discharge of spreader needs to be undisturbed and well – established minimum uniform 90% perennial grass cover. (ie: woods are not consider stable areas) The last 20 feet of a diversion channel to earthen level spreader needs a smooth transition is less than or = to 1%
- _____ Should be parallel to existing contour and 0% grade and should not be made of fill.
- _____ Earthen spreaders not allowed below a trap, basin or stormwater pipe discharge only structural level spreaders.
- _____ The maximum design discharge to an earthen level spreader =1 cfs per foot of length based on peak rate of flow from a 10 year frequency storm or minimum 5 feet length per acre of drainage area not be less the 5 feet and to exceed 25 feet in length.

Other BMPs

Slopes 3:1 or steeper

_____ Slopes 3:1 or steeper should erosion control matting (show locations, details)

_____ Stair step grading (see figure 16)

_____ Grooving details (see figure 17)

Benches

_____ Slopes more than 40 feet high need benches at 30 feet vertical intervals.

_____ Drainage slope min. 2% and max: 5%

_____ Bench spacing (see table 20)

_____ Discharge to an adequately sized and stabilized conveyance facilities (storm drain, swale/channel)

_____ Standard Construction Detail #24 was not provided

_____ Maintenance notes were not provided.

Trench Plugs Page 129 of E&S Manual

_____ Trench plugs required at all stream/wetland crossing

_____ Type of material in sacks

_____ Spacing and details (see figure 31)

ROCK CONSTRUCTION ENTRANCES (pages 80-81 of E&S Manual)

_____ A rock construction entrance has not been provided at the ___ entrance.

Complete Details

_____ A rock construction entrance detail (Standard Construction Detail #16) has not been provided.

_____ The rock construction detail provided is inadequate (ex._____)

_____ AASHTO #1 rock size not provided

_____ Minimum 50' length not provided

_____ Minimum width not provided

_____ Minimum 8" depth not provided

_____ Underlying geotextile fabric not provided

_____ Maintenance note has not been provided

_____ Wash Rack details (see Standard Construction Detail #15)

BROAD-BASED DIPS/WATERBARS PAGE 130 of E&S Manual

_____ The broad-based dip has not been shown on a 30 degree angle to the main road alignment.

_____ Broad based dip/waterbar is needed to be shown across rough-graded roadways to direct runoff into basins and/or traps.

- _____ The spacing of the broad-based dip/waterbar(s) is inadequate given the % slope and length of slope shown. (see figure 32)
- _____ A broad-based dip construction detail has not been provided.
- _____ The broad-based dip construction detail provided is inadequate (ex. _____).
 - _____ Minimum 2' depth not provided
 - _____ Minimum 20' length not provided

INLET PROTECTION (pages 104-110 of E&S Manual)

- _____ All inlets have not been identified (by number) on the plan drawing.
- _____ The inlets receiving the proposed inlet protection have not been identified on the plan drawing.
- _____ Inlet protection may not be used as the only (primary) BMP between a disturbed area and waters of the Commonwealth.
- _____ FYI - Inlet protection is not required for inlets draining to a sediment trap or basin.
- _____ Inlet protection should not be used on major paved roadways where ponding may cause traffic hazards. The inlets should drain to an adequate sediment trap or basin.

Inlet Drainage area

- _____ The drainage areas to the inlet(s) receiving inlet protection have not been outlined and labeled on the plan drawing.
- _____ The drainage area to inlet(s) exceeds the maximum ½ acre allowable for inlet sac protection or 1 acre for the stone filter.

Inlet Complete details

- _____ Inlet protection construction details (See Standard Construction Details 28-32) have not been provided on the plan detail sheet(s).
- _____ Compacted earthen, stone, and asphalt inlet berm details have not been provided on the plan detail sheet(s). Minimum 6" high above the grate, 1' top width inlet berms are required for all inlets not located in a minimum 6" sump condition until the final wearing course is installed.
- _____ The inlet protection detail(s) provided is inadequate (ex. _____)
 - _____ Sandbags not shown over throat of inlet
 - _____ Rebar not shown
 - _____ 6" of #57 filter stone not shown
 - _____ Overflow pipe with minimum 4" head not shown
 - _____ Galvanized ¼" maximum opening wire mesh not shown
 - _____ Geotextile fabric over grate may not be used
 - _____ Maintenance notes have not been provided requiring clean out or replacement after every runoff event

PUMPED WATER FILTER BAGS (page 100 of E&S Manual)

- _____ A pumped water filter bag construction detail (See Standard Construction Detail #26) has not been provided on the plan detail sheet(s).
- _____ The pumped water filter bag construction detail provided is inadequate (ex. _____).

- Pumping rate not specified
- Stable discharge area not provided
- Hose clamps not shown

VEGETATIVE FILTER STRIPS (page 82 of E&S Manual)

- Photo documentation has not been provided to verify the suitability of the *existing* vegetative filter strip. Vegetative filter strips must occur on the project site.
- The proposed vegetative filter strip is inadequate (ex. ____).
 - Not composed of well-established perennial grass
 - Not located within the property boundaries
 - Upslope area exceeds maximum slope length for required sheet flow conditions
 - The minimum filter strip width has not been provided
 - Width of filter strip ($W_{min}=2S +25ft$) (50 feet min.)

TEMPORARY SLOPE PIPES (pages 102-103 of E&S Manual)

- Temporary slope pipe construction detail (See Standard Construction Detail #27)
 - Minimum 10' wide top of slope berm
 - Minimum berm height (see table 21)
 - Minimum pipe diameter (see table 21)
 - Stakes to secure pipe to the slope (Max. distance between stakes is 10')
 - Drainage area Max. = 5 acres
- Should be sized to convey anticipated peak flow from the designed storm.
- How will you prevent the formation of gullies on the out slope of the fill (*describe fill location*)? A top-of-slope berm should be considered at (*indicate location[s]*) to prevent runoff from creating gullies on the out-slope of the proposed fill.
- Provide an installation typical on a detail sheet for the proposed top-of-slope berm at (*location*). A drawing similar to STANDARD CONSTRUCTION DETAIL #27A is recommended.
- Indicate the location(s) of all proposed top-of-slope berms on the plan map(s).
- A temporary slope pipe should be considered at (*location*) to safely convey runoff to the bottom of the proposed fill slope.
- A temporary slope pipe should be installed at the low point on the top-of-slope berm at (*location*) to convey runoff to (*channel, basin, or trap number*).
- Indicate how the proposed temporary slope pipe(s) will be anchored.
- The slope pipe at (give location) is smaller than the minimum required in Table 21 of the Erosion and Sediment Pollution Control Program Manual. Please Correct.
- Outlet protection should be provided at the end of the pipe. Please provide details.

DYNAMIC/TOP-OF-SLOPE BERMS (page 101 of April 15, 2000 E&S Manual)

STILLING WELLS (page 122-124 of April 15, 2000 E&S Manual)

PIPELINE & UTILITY PROJECTS (page 125-130 of April 15, 2000 E&S Manual, "Avoiding Common Erosion & Sediment Control Plan Deficiencies – Pipe and Utility Line Projects" – July 2000-DEP, and "Underground Utility Line Construction – Typical Erosion & Sediment BMPs" – DEP-Bureau of Watershed Management – August 1, 2001)

IN-CHANNEL WORK (pages 131-135 of April 15, 2000 E&S Manual and, "Avoiding Common Erosion & Sediment Control Plan Deficiencies – Pipe and Utility Line Projects" – July 2000-DEP)

STREAM RESTORATION ("Recommended Minimal Guidelines for Erosion & Sediment Control at Stream Restoration Projects" – DEP-SCRO-S&W -Revised 2/29/00)

SINGLE LOTS – Need to show all scenarios and label which lot goes with which scenario. (Check silt fence length and construction entrance.)

COMPOST FILTER BERMS (p. 136a of April 15, 2000 E&S Manual)

TEMPORARY STABILIZATION (pages 70-78 of E&S Manual)

_____ The temporary stabilization specifications have not been provided with the plan drawing (See the "Erosion Control & Conservation Plantings on Noncropland" or the PennDOT 408 specs.) (**ex. seed type and rate, lime type and rate, fertilizer type and rate, mulch type and rate**).

_____ The Penn DOT 408 specifications referenced on the plan do not provide the specific seed types & rates (i.e. Table A).

_____ The temporary seeding application rate provided is inadequate (See the "Erosion Control & Conservation Plantings on Noncropland" or the PennDOT 408 specs.).

_____ The temporary fertilizer application rate provided is inadequate (See the "Erosion Control & Conservation Plantings on Noncropland" or the PennDOT 408 specs.).

_____ The temporary liming application rate provided is inadequate (See the "Erosion Control & Conservation Plantings on Noncropland" or the PennDOT 408 specs.).

_____ The temporary mulch application rate provided is inadequate ("Erosion Control & Conservation Plantings on Noncropland," Table 16, page 77 of the current E&S Manual or the PennDOT 408 specs.).

_____ Wood cellulose fiber hydromulch alone is an inadequate BMP. Straw mulch at a rate of 3 tons per acre may be utilized alone or in conjunction with the application of a wood cellulose fiber hydromulch.

_____ The temporary stabilization specifications do not provide for anchoring of straw-mulch (See pages 76 & 77 of current E&S Manual).

PERMANENT STABILIZATION (pages 70-78 of E&S Manual)

_____ The permanent stabilization specifications have not been provided with the plan drawing (See the "Erosion Control & Conservation Plantings on Noncropland" publication or the PennDOT 408 specs.). (**ex. seed type and rate, fertilizer type and rate, mulch type and rate**).

_____ The Penn DOT 408 specifications referenced on the plan do not provide the specific seed types & rates (i.e. Table A).

_____ The permanent seeding application rate provided is inadequate (See the "Erosion Control & Conservation Plantings on Noncropland" publication or the PennDOT 408 specs.) in the absence of soil test results.

_____ The permanent fertilizer application rate provided is inadequate (See the "Erosion Control & Conservation Plantings on Noncropland" publication or the PennDOT 408 specs.) in the absence of soil test results.

_____ The permanent liming application rate provided is inadequate (See the "Erosion Control & Conservation Plantings on Noncropland" publication or the PennDOT 408 specs.) in the absence of soil test results.

_____ The permanent mulching application rate provided is inadequate (See the "Erosion Control & Conservation Plantings on Noncropland," publication Table 16, page 77 of the current E&S Manual or the PennDOT 408 specs.).

- _____ Wood cellulose fiber hydromulch alone is an inadequate BMP. Straw mulch at a rate of 3 tons per acre may be utilized alone or in conjunction with the application of a wood cellulose fiber hydromulch.
- _____ The permanent stabilization specifications do not provide for anchoring of straw-mulch (See pages 76 & 77 of current E&S Manual).
- _____ The plan does not address replacing topsoil and the depth of topsoil to be placed (suggest *minimum* 6" to promote stormwater infiltration and permanent vegetative stabilization) on all disturbed areas to be permanently revegetated.
- _____ The permanent seed type provided does not perform well in **(acidic, low fertility, excessively dry, excessively wet, steep slope)** soil conditions (See Table 15, page 75 of the current E&S Manual).
- _____ A temporary nurse crop (ex. annual ryegrass, spring oats, winter rye) has not been provided in the permanent perennial seed mix provided (See the "Erosion Control & Conservation Plantings on Noncropland" publication or the PennDOT 408 specs.).

OTHER STABILIZATION

- _____ Chapter 102.22 requires stabilization of all disturbed areas *immediately* upon completion of an earth disturbance activity or any stage or phase of an activity. Please remove all references to allowing 20 days to pass before stabilizing idle disturbed areas.
- _____ A standard note needs to be on the plan stating that, "*Immediately after earth disturbance activities cease, the operator shall stabilize the disturbed areas. During non-germinating periods, mulch must be applied at the specified rates. Disturbed areas which are not at finished grade and which will be redisturbed within 1 year must be stabilized in accordance with the temporary vegetative stabilization specifications. Disturbed areas which are at final grade or which will not be redisturbed within 1 year must be stabilized in accordance with the permanent vegetative stabilization specifications.*"
- _____ The plan does not address installation of an erosion control blanket on all disturbed areas within 50 feet of Waters of the Commonwealth (ex. streams, ponds, wetlands)(see page 78 of March 2000 E&S Manual).
- _____ The plan does not address stabilization of the agricultural fields within the project boundaries that are not proposed to be developed or are part of a future phase of development. If the fields are to be abandoned and remain idle and are not planted in a perennial hay crop (ex. corn and soybean fields) they need to be permanently stabilized per Chapter 102.22.

102.4(b) (5) (x) "A maintenance program which provides for inspection of BMPs on a weekly basis and after each measurable rainfall event, including the repair of BMPs to ensure effective and efficient operation."

Inspection schedule

- _____ A standard note has not been provided on the plan stating, "*Until the site is stabilized, all erosion and sediment control BMPs must be maintained properly. Maintenance must include inspections of all erosion and sediment control BMPs after each runoff event and on a weekly basis. All preventative and remedial maintenance work, including clean out, repair, replacement, regrading, reseeding, remulching and renetting must be performed immediately. If erosion and sediment control BMPs fail to perform as expected, replacement BMPs, or modifications of those installed will be required.*"

Maximum sediment storage elevation/level in BMPs

- _____ The maintenance notes and clean out instructions have not been located with each BMP's construction detail.

