



April 22, 2022

Jason Bobst, Township Manager/Secretary
West Norriton Township
1630 West Marshall Street
Jeffersonville, PA 19403

RE: T-Mobile Northeast, LLC
Stormwater Management Review – REVISIONS REQUIRED
West Norriton Township
233-22-0190

Dear Mr. Bobst,

As requested, CEDARVILLE Engineering Group, LLC (CEG) has completed a Stormwater Management Review of the Permit Plan for T-Mobile Northeast, LLC. This proposes the consolidation of three (3) parcels (Parcel ID 63-00-05335-00-2, 63-00-05338-00-8, and 63-00-05332-00-5) for the first phase of development (Phase 1) and proposes the consolidation of an additional parcel (63-00-03628-00-8) as part of the second phase of construction (Phase 2). The plans as presented reference development associated with Phase 1, with stormwater management designed to accommodate both the first and second phases of construction. The total tract areas associated with both phases are as follows:

- Phase 1 – 3.33 acres
- Phase 2 – 3.84 acres

The site is located on the southeast corner of South Montgomery Avenue and Jackson Street in the LC&I Limited Commercial and Industrial Zoning District of West Norriton Township. The project includes a building addition and associated improvements, including proposed generators, and an access driveway, referred to as Phase 1. The applicant is proposing an underground detention/infiltration facility as a stormwater management best management practice (BMP). This facility is proposed to be installed as part of Phase 1 and has been designed to accommodate Phases 1 and 2.

The following information was received by our office on April 5, 2022:

- A. Full size plan titled “Lot Consolidation & Land Development Plan for T-Mobile” prepared by Bercek & Associates, LLC., dated March 21, 2022, Sheets 1–7 of 7.
- B. “Post Construction Stormwater Management Report for T-Mobile Northeast, LLC prepared by Bercek & Associates, LLC., dated January 26, 2022.
- C. Full size plan titled “U-Drain Design Plan for West Norriton Township”, prepared by Bercek & Associates, LLC., dated January 12, 2022, 1 sheet.

The referenced documents have been reviewed for compliance with Chapter 26 – Water, Part 1 – Stormwater Management.

The following comments are offered for your consideration:



Lot Consolidation & Land Development Plan

Chapter 26, Water, Part 1, Stormwater Management:

1. *Section 26-121.8.B. – Measures used to control erosion and reduce sedimentation shall, at a minimum, meet the standards and specifications contained in the latest edition of the “Erosion and Sediment Pollution Control Project Manual”, published by the PA DEP.*

The Phase 1 Erosion and Sedimentation Control Plan shall be revised as follows:

- The proposed orange safety protection fencing shall coincide with the Limit of Disturbance line. Fence placement shall be reconfigured in the following areas:
 - Along the Limit of Disturbance proposed to the southwest of the proposed generators.
 - The fencing shown to the south of the existing parking area (south of the existing building) shall extend along the limit of disturbance line and end at the edge of the existing parking area.
 - The proposed orange safety/construction fencing shall be offset a minimum of one foot from the tract boundary line.
 - Calculations shall be provided to support the design of the proposed compost filter silt sock, in accordance with Figure 4.2, “Maximum Permissible Slope Length Above Compost Filter Socks” as included in the Pennsylvania Erosion and Sedimentation Pollution Control Manual.
 - A table shall be provided with the Compost Filter Sock Detail, Sheet 6, outlining the size of silt sock required for each section of sock. Associated labeling of each sock section shall be provided on the Erosion and Sedimentation Control Plan, Sheet 5.
 - Additional rock filters shall be provided in the following areas:
 - Surrounding Inlets A3 and A4.
 - At the termination of the swale adjacent to the embankment between the proposed stormwater management BMP and Jackson Street.
2. *Section 26-121.8.E(11) – Edges of slopes shall be a minimum of five feet from property lines or right-of-way lines in order to permit the normal rounding of the edge without encroaching on the abutting properties:*

The grading proposed adjacent to the north boundary line of Parcel 63-030-022 shall be revised to tie into the existing contours a minimum of five (5) feet from the property boundary.

3. *Section 26-121.8.E(12) – Concentration of stormwater runoff shall be permitted only in stabilized swales, watercourses or detention basins. Subject to the approval of the Township Engineer, swales shall be sodded or have just matting or other similar measures to insure long-term stability and property growth of the ground cover.:*

Stabilization shall be provided in the following areas of concentrated flow, in accordance with the referenced Ordinance section:

- To the west of the embankment, between the proposed stormwater management BMP and Jackson Street.
- To the south of the embankment between the proposed stormwater management BMP and Parcel 63-030-022.

Specifications associated with the stabilization to be used shall be referenced on the Plan.



4. *Section 23-121.17.A – The Township Engineer may require a review by the Montgomery County Soil Conservation District of any plan for earth disturbance activity involving less than one acre. In all other instances where the extent of the proposed earth disturbance activity is one acre or more, that applicant must obtain the following: A National Pollutant Discharge Elimination System (NPDES permit from the Pennsylvania Department of Environmental Protection or its designee.*

The total limit of disturbance associated with this project exceeds one acre. The following shall be provided:

- The Township shall be provided copies of the initial and subsequent submission to the Montgomery County Conservation District.
 - A copy of the NPDES Permit shall be provided to West Norriton Township upon receipt.
5. *Section 26-122.1 – No regulated earth disturbance activities within the Township shall commence until approval by the Township engineer of a plan, which demonstrates compliance with State water quality requirements after construction, is complete. Techniques described in Appendix A, “Stormwater Management Criteria and Design Criteria”, and Appendix B, “Low Impact Development”, of this Part is required when feasible, because they reduce the costs of complying with the requirement of this Part and the State water quality requirements.*

Appendix A, Section A.(3) – All plans and design for stormwater management systems and facilities submitted to the Township for approval shall determine stormwater peak discharge and runoff by use of the Soil Cover Complex Method as set forth in the U. S. Department of Agriculture, Soil Conservation Service Publication entitled “Urban Hydrology for Small Watersheds,”, Technical Release #55 (latest edition), with specific attention given to antecedent moisture conditions, flood routing and peak discharge specifications included therein, and in the Hydrology National Engineer Handbook, Section 4, both U. S. Department of Agriculture, Soil Conservation Service.

The following shall be provided:

- The above-reference Ordinance section requires the use of the SCS method for peak rate calculations; however, the Township Engineer (Gilmore & Associates, Inc.) indicated that a Modified Universal Rational Storm method would be acceptable for this project in an email to Bercek & Associates dated September 16, 2021.
 - Time of concentration (tc) flow paths shall be shown for the pre-development drainage area Plans, with calculations provided per the above referenced criteria and implemented as part of the pre-development flow calculation. Post development times of concentration may utilize a 5-minute tc or be based upon calculation based upon actual flow length.
6. *Section 26-122.2 – The BMPs must be designed, implemented, and maintained to meet State water quality requirements, and any other more stringent requirements as determined by this Part and the Township Engineer.*

Section 122.3.C. – State water quality requirements can be met by using BMPs to control post-construction stormwater impacts from regulated earth disturbance activities. BMPs can include a site design, which provide for replication of pre-construction stormwater infiltration runoff conditions, so that post-construction stormwater discharges do not degrade the physical, chemical, or biological characteristics of the receiving waters. As described in the PA DEP Comprehensive Stormwater Management Policy (#392-0300-002, September 28, 2002), this may be achieved by the following: Stream Bank and Streambed Protection. Management of volume and rate of post-construction stormwater discharged to prevent physical degradation of receiving water (e.g. downstream bank erosion).



Peak rate calculations, as provided in the PCSM Report, shall be revised to utilize predevelopment ground cover as referenced in the Pennsylvania Stormwater BMP Manual, Section 3.3.3, Volume Control Guideline 1, as follows:

- Existing (pre-development) non-forested pervious areas must be considered meadow (good condition) or its equivalent.
- Twenty (20) percent of existing impervious area, when present, shall be considered meadow (good condition) in the model for existing conditions for redevelopment.

Storm inlet A3 and A4 shall provide pre-treatment of stormwater prior to entering the BMP, utilizing a snout and sump or other means of pre-treatment in accordance with the Pennsylvania BMP Manual. Operation and maintenance notes associated with these inlets shall be provided on the Plan.

7. *Section 26-122.4 – Evidence of receipt of all necessary permit(s) for regulation earth disturbance activities from the appropriate PA DEP regional office must be provided to the Township Engineer. The issuance of an NPDES construction permit (or permit coverage under the Statewide general permit (PAG-2)) satisfies the requirement of subsection 304.A.*

A copy of the NPDES Permit for Construction Activities shall be provided to West Norriton Township upon receipt.

8. *Section 26-122.5 – BMP operations and maintenance requirements shall be followed as described in Part 1D.*

The following shall be provided:

- Operation and Maintenance notes associated with the proposed stormwater management BMP and water quality (pre-treatment) inlets shall be provided with the Plan Detail, Sheet 4. The notes shall address the utilization of the 6-inch PVC cap located within the weir wall of the outlet structure.
- An Operation and Maintenance Agreement, in accordance with Chapter 26, Appendix C, shall be completed and executed for all applicable BMPs upon approval of the Plan, and shall be recorded concurrently with the Land Development Plan.

- 6 *Section 26-122.6.I – All stormwater detention/retention/infiltration facilities shall be in place and function prior to the creation of any impervious surface. As-built drawings of the facilities shall be submitted to the Township for review. The facilities shall not be considered functional until it is proved by the developer the facilities meet the volume requirement and the outflow characteristics of the original designs. Runoff shall not be directed to an infiltration structure until all contributing drainage areas are stabilized.*

The following shall be addressed:

- The Site Construction Sequence shall be revised to reference the installation of the stormwater management BMP (currently shown as Step 10) prior to the installation of any impervious improvements, including but not limited to the proposed building addition.
- A step shall be included in the Sequence requiring the completion of an as-built drawing immediately upon installation of the stormwater management BMP.

- 7 *Section 26-122.6.K – The existing points of natural drainage discharge onto adjacent properties shall not be altered without the written approval drainage easement from the affected landowners and approval of the Township Board of Supervisors.*



Revisions to the proposed post development discharges shall be provided to alleviate concentrated post development stormwater discharges, from the following parcels based upon the referenced discharges:

- Parcel 63-00-3628-00-8 – Discharge from the swales adjacent to the embankment associated with the proposed BMP will create a concentrated discharge onto the referenced parcel.
- Parcel 63-00-02473-00-2 – Discharge from the proposed swale located between the proposed generators and the existing building will create a concentrated discharge onto the referenced parcel.

If these requirements cannot be met, easements shall be obtained from the owners of the parcels listed above.

U-Drain Design Plan

Chapter 26, Water, Part 1, Stormwater Management:

- 8 *Appendix A, Section A.(6) – All stormwater collection pipes, inlets and swales shall be designed to handle the peak flow rate for the one-hundred-year storm. An inlet/outlet control evaluation shall be utilized to determine all pipe sized in accordance with the method outlined in Hydraulic Design of Highway Culverts, Federal Highway Administration.*

The referenced Plans propose an underdrain system to be installed along the south side of South Montgomery Avenue, utilizing a trench consisting of a trench filled with AASHTO #57 stone, wrapped with geotextile, with a six (6) inch layer of AASHTO #1 stone constructed on top the trench, with the top of stone constructed to finish grade. The following is noted as it applies to the design as presented:

- The trench is to be constructed directly adjacent to the cartway of South Montgomery Avenue. The AASHTO #1 creates a potential safety hazard to vehicular traffic due to the unstable nature of the proposed clean stone.
- The above referenced clean stone is subject to premature deterioration due to maintenance activities such as snow plowing.
- The AASHTO #1 will collect silt and debris which will adversely affect the ability for the trench convey stormwater from the roadway surface to the underdrain. This will result in ponding along the roadway gutter due to the proximity of the embankment located adjacent to the edge of the roadway.

It is recommended that the following be considered to provide a long-term benefit to the Township:

- Additional inlets provided along the proposed storm sewer run, along with vegetative swales used to positively convey flow to the proposed inlets, would provide a longer-term solution to ensure positive drainage is maintained and that ponding of stormwater is alleviated in these areas.
- It is recommended that the above referenced swale and underdrains be designed to accommodate the 100-year frequency storm, in accordance with the referenced Ordinance section. If it determined that the 12-inch underdrain is not of sufficient size to convey this flow, combination storm sewer / underdrain of acceptable size may be used, in accordance with the applicable detail included in PennDOT RC Standards, RC-30M. This will require relocating the toe of the existing embankment slope away from the roadway to accommodate the swale, through additional embankment removal, stabilization or retaining walls as may be necessary.
- If the above is to be implemented, a cross section shall be provided, clearly showing the required dimensions and stabilization associated with the roadway swale.
- If the above is to be implemented, supporting conveyance and gutter spread calculations shall be provided in accordance with the above referenced Ordinance section and PennDOT Design Manual 2.



Upon receipt of the revised information referenced in this letter, CEG will review to determine compliance with West Norriton Township Ordinances. Please feel free to contact me with any questions.

Best Regards,
CEDARVILLE Engineering Group, LLC

Robert E. Flinchbaugh, P.E.
Senior Municipal Engineer

cc: T-Mobile Northeast, LLC
Glen Kelczewski, Bercek & Associates
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