

January 30, 2023

Justin Evans, AICP
Township Manager
Mount Joy Township
8853 Elizabethtown Road
Elizabethtown, PA 17022

Via email: Justin@mtjoytp.org

Re: 283 Commerce Center – Building #1
Final Land Development Plan
Township Permit No. 23-02-PLDP
LCEC Project No: 25-150



LANCASTER CIVIL

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Dear Mr. Evans,

We have received a final land development plan submission from Landworks Civil Design, LLC for the above-referenced project. The submission consisted of the following documents:

- Letter of transmittal (with waiver requests) dated January 3, 2023
- Final Land Development Plan dated January 3, 2023
- Post Construction Stormwater Management Report dated January 3, 2023
- Geotechnical Engineering Report for Stormwater Management dated August 22, 2022
- Wetland Delineation Report dated April 21, 2022

Based upon my review of the submitted information, I offer the following comments for the Township to consider:

Zoning Ordinance

1. The property is located within the Light Industrial District. A special exception would be required for the proposed warehousing use building area to exceed 50,000 square feet (135-163.B). A special exception would also be required for the proposed warehousing use involving the storage of various electrical equipment and parts (135-163.C).
2. Section 119-51.B of the Subdivision and Land Development Ordinance requires that a special exception shall be obtained prior to the submission of a formal subdivision and/or land development plan. In addition, the subdivision and/or land development plan shall be designed in accordance with any conditions imposed on the approval of the special exception by the Zoning Hearing Board. The applicant has submitted a land development plan prior to obtaining the required special exception; therefore, all comments herein shall be considered as tentative, and any comments provided may be substantially revised based on any future Zoning Hearing Board decision. If approval of the special exception is obtained, the plans shall be revised, if necessary, to meet any/all conditions imposed by the Zoning Hearing Board in its approval of the special exception. Additional comments may be required based on any redesign required by the Zoning Hearing Board decision if the special exception is approved. The minimum building height shall be added to the Zoning Data table (135-165.A(1)).

3. The minimum and existing street frontage shown in the Zoning Data table shall be revised to say minimum and existing lot *width* (135-165.C(2) & Section 135-32, Definitions: "Lot Width").
4. A minimum caliper of 2.5" and a minimum height of five feet are required for trees within the residential buffer strip (135-166.A(1)). The heights of trees shown in the Planting Schedule shall be provided for each tree.
5. Wall-mounted luminaires shall have fixtures that cut off direct light from view. All luminaires which exceed 2,000 lumens shall have fixtures that cut off direct light from view (135-298.C(2) & (3)).
6. The exterior lighting plan shall include the number of lighting fixtures, a calculation of the average illumination levels, and the height of the proposed lighting fixtures (135-298.D(2)). A construction detail shall be provided for the proposed light fixtures.
7. All nonresidential uses shall contain a landscape strip in all yards. For every 750 square feet of required landscape strip, one shade/ornamental tree shall be provided in the required landscape strips (135-299.B). The applicant shall provide calculations based on the required landscape strip showing that this requirement has been met.
8. All nonresidential uses shall contain a landscape screen when such use is adjacent to a lot that is available for residential use (135-299.C(1)). The northern property line of the tract (tax parcel #4618992200000) shall meet this requirement.
9. All areas within the perimeter of the proposed parking lots shall be counted in the determination of interior landscaping requirements (i.e. access drives, aisles, islands, and curbed areas) (135-299.D(2)(a)). The "Impervious Area" shown on Sheets C-801 and C-802 is inconsistent with this requirement.
10. Grading and earthmoving on steep slopes shall not result in cuts or fills whose vertical dimensions exceed 10 feet (135-305.D(1)). Where no reasonable alternative exists for construction of roads, drainage structures, and other public improvements, the vertical dimensions of cuts and fills shall not exceed 20 feet (135-305.D(1)(a)). The maximum vertical dimension does not apply if an engineered retaining wall is constructed; however, the plans show areas of fill and cut exceeding 10 and 20 feet without a proposed retaining wall.
11. Finished slopes of all cuts and fills shall not exceed 3:1, unless the applicant can satisfactorily demonstrate that the steeper slopes can be stabilized and maintained adequately (135-305.D(2)).
12. Riparian corridors shall be established to include 30 feet on each side of the watercourse, measured from the top of each stream bank (135-306.B). The riparian corridors shall encompass, at a minimum, the entire 100 year floodplain and the wetland (135-306.C). The applicant shall enter into a recordable agreement with the Township providing for the permanent maintenance of the riparian corridor, in a form acceptable to the Township Solicitor (135-306.F). The riparian corridor shall be shown on the plans.
13. A 25 foot buffer surrounding the wetlands boundary shall be conserved (135-307.B). The applicant shall enter into a recordable agreement with the Township providing for the permanent maintenance of the wetland area, in a form acceptable to the Township Solicitor (135-307.E). The wetland buffer shall be shown on the plans.
14. Curb cuts for an access drive that intersects the cartway of a collector roadway shall not exceed 24 feet in width (135-326.A). The developer shall provide truck turning templates to demonstrate that the proposed access drive width at Mount Pleasant Road is the minimum width it would take to allow truck deliveries to occur safely on the site (135-326.A(4)).

15. Off street loading space information shall be shown on the plans (135-346).

Subdivision and Land Development Ordinance

16. A preliminary plan is required (119-25). The applicant has requested a modification of this requirement.

Modification response: The applicant proposes to process this as a preliminary/final plan which includes both preliminary and final plan requirements. This project is not phased and construction of public improvements is not scheduled to begin prior to plan recordation, therefore I have no objection to this modification.

17. The existing conditions plan shall be shown at a scale between 20 feet and 100 feet to the inch (119-31.A(1)). It is recommended that the existing conditions plan be shown at the same scale as the rest of the plan sheets.

18. The plan sheet size shall be 24" by 36" (119-31.A(3) & 113-42.C). The applicant has requested a modification of this requirement.

Modification response: The applicant has requested to submit 30" x 42" sized plan sheets, which provides more information to be placed on each sheet at a legible scale. The plans have been designed to meet all other drafting standards. Per the County Recorder of Deeds office, the maximum sheet for plans to be recorded is 24" x 36". Based on these considerations, I am unable to support a modification of this requirement.

19. There are several instances of overlapping/obscured text that shall be resolved (119-31.A(4)).

20. The plans shall be signed and sealed by a registered engineer, surveyor or landscape architect (119-31.A(5)).

21. The title should indicate that this is a preliminary/final land development plan (119-31.B(1)).

22. The address of the owner listed on Sheet 1 of the plans does not match the address of the owner as shown on the County Assessment website (119-31.B(3)).

23. Since development is proposed on the Franklin B. Greiner Jr. property (tax parcel #461153790000), this property shall be listed as a subject tract with all the required information provided (and SALDO requirements met) for this property (119-31.B(3)).

24. The location of the Agricultural and Light Industrial zoning district boundary lines shall be shown and labeled on the plans (119-31.B(9)).

25. The tax parcel identification number referenced for the subject tract shall be corrected. The plan book information for the subject tract(s) shall be shown on the plan (119-31.B(10)).

26. The Clean and Green note shall be added to the plans (119-31.B(11)).

27. The plan shall identify all prior plans, including all notes or restrictions affecting the current development, with a verification signed by the design professional that such list is complete and correct (119-31.B(14) & 119-51.C).

28. Contours shall be accompanied by the location of the bench mark used (119-31.C(1) & 113-43.I(1)).

29. The plan book information of all adjacent landowners shall be shown on the plan, including those across existing rights-of-way (119-31.C(2)).

30. Existing features within 200 feet of the subject tract (e.g. buildings, driveways, ROW, cartway, on-lot water supplies, topography, etc.) shall be shown on the plans (119-31.C(3)).

31. The dimensions of the existing right-of-way and cartway for Steel Way shall be added to the plan (119-31.C(3)(a)).
32. The "30' Half R.O.W." label shown for the Franklin B. Greiner Jr. tracts (Instrument #6366599 and 5720275) shall indicate that the right-of-way is existing (119-31.C(3)(a)).
33. The total number of lots, units of occupancy, and density shall be provided on the plans (119-31.D(3)).
34. The building setback lines shall be shown for the parcels adjacent to the proposed Steel Way improvements (119-31.D(5) & 119-55.A).
35. The cross sections for the proposed Steel Way extension and Mount Pleasant Road and Stauffer Road improvements shall be added to the plans (119-31.D(7) & 119-52.J(2)). The applicant shall clarify the scope of demolition / reconstruction for those areas labeled "Pavement To Be Removed" shown on the demolition plans.
36. The applicant shall supply proof that the driveway permit has been issued to permit a driveway or street intersection to be completed at the proposed location or certification from a professional engineer that consistent with the regulations of PennDOT a permit can be issued to permit a driveway to be completed at the proposed location (119-31.D(8)). Either a copy of the PennDOT HOP shall be provided prior to plan recording, or a certificate in accordance with Appendix No. 1 shall be added to the plan.
37. The plans shall indicate when the lot line markers are to be set (119-31.D(14)(a) & 119-57.D).
38. The highway occupancy note (i.e. Site Plan Note 19) shall be revised to reference the Planning Commission (119-31.D(14)(d)).
39. An erosion and sedimentation control plan shall be submitted (119-31.D(14)(e)).
40. A water and sewer feasibility report shall be provided (119-32.A & 119-35.E(3)(b)).
41. Certification shall be provided from the public water and sewer provider that capacity exists to accommodate the proposed development (119-32.A(2)(a)[3] & 119-32.A(2)(b)[4]).
42. A PDNI search and the resumes of the wetland scientist shall be included in the wetlands study (119-32.B).
43. A traffic impact study is required since the development is a nonresidential development with a building in excess of 1,000 square feet of usable space (119-32.C(2)).
44. An agreement to serve the property shall be provided from the Elizabethtown Water Authority (119-34.E(1)(e)).
45. Bearings and distances shall be provided for the proposed right-of-way of the Steel Way extension (119-35.D(1)).
46. The proposed water main and sanitary sewer force main shall be shown on the roadway profiles (119-35.D(3)).
47. The first floor elevations shall be provided (119-35.D(5)).
48. The following items shall be addressed for the grading plan (119-35.D(5)):
 - a. The proposed 493 foot contour(s) near the eastern access drive on Sheet C-401 shall be confirmed.
 - b. The outlet structure labels for MRC Facility #4 obscure the proposed contours.

49. A statement shall be added to the plan indicating the granting of the special exception and variances granted by the Zoning Hearing Board, including all of the conditions (119-35.D(6) & 119-51.B).
50. All certificates shall be executed prior to final plan approval (119-35.E).
51. Written notice shall be provided from the DEP that approval of the sewer planning module has been granted or notice from the Department that such approval is not required (119-35.E(2)(a) & 119-60.A).
52. Written notice shall be provided from the public water provider's engineer and the public sewer provider's engineer that all proposed improvements have been designed to the standards of the Township, the public water provided and/or the public sewer provider (119-35.E(2)(e)). The written notice shall also confirm that financial guarantees for the public water and/or sewer improvements have been received.
53. Written notice of approval by the public sewer and public water provider shall be provided (119-35.E(2)(e) & (f) / 119-60.A(2) & B(3)).
54. Written notices from the emergency service providers that will serve as the primary responders for the land development shall be submitted indicating that the building layout is satisfactory and will not present any obstacles or other problems for emergency responders to the land development (119-35.E.(2)(h)).
55. Legal descriptions for easements to be dedicated to the Township, including but not limited to, drainage easements and snow stockpile easements, shall be provided (119-35.E(4)(a)).
56. Legal descriptions for the right-of-way proposed for dedication to Mount Joy Township shall be provided (119-35.E(4)(b)).
57. A Stormwater Management Agreement and Declaration of Easement in a form acceptable to the Township Solicitor shall be executed and recorded (119-35.E(4)(c), 119-56.E & 113-62).
58. An easement will be required for the proposed grading / earth disturbance on the adjoining Kinsey Realty, Frank B. Greiner Jr., and Nelson Hollinger properties (119-35.E(4)(e)).
59. A land development agreement in a form acceptable to the Township Solicitor shall be executed (119-35.E(4)(f)).
60. A construction cost estimate and financial security shall be provided (119-41 & 113-60).
61. Street name signs shall be installed at the intersection with Mount Pleasant Road and the Steel Way extension. Sign posts shall be breakaway steel square posts (119-52.G(3)). A construction detail shall be provided for the street name sign.
62. The Mount Pleasant Road intersection shall be shown on the Roadway Profile Steel Way Extension (119-52.H(2)).
63. As designed, the minimum rate of vertical curvature for Steel Way is designed for a 20 mph initial speed. The posted speed limit for Steel Way is 30 mph; therefore the vertical curves shall be designed for a minimum speed of at least 30 mph (119-52.H(2)).
64. The maximum slopes of banks shall not exceed 3:1 for fills (119-52.H(5)(a)). The street cross section details shall include this requirement.
65. The location of the guide rail shown in the Type 31 Strong Post Guide Rail detail shall be shown on the plan view (119-52.H(5)(c)).

66. As designed, the minimum rate of horizontal curvature for Steel Way is designed for a 25 mph initial speed. The posted speed limit for Steel Way is 30 mph (119-52.I(1)(c)). The applicant has requested a waiver of this requirement.

Waiver response: The radius for the horizontal curve on Steel Way closest to the proposed intersection of Steel Way with Mount Pleasant Road is proposed to be 175 feet. All other proposed horizontal curves on Steel Way are designed for a 30 mph initial speed (i.e. with a minimum radius of 230 feet), and designing the remaining curve to meet the ordinance requirements appears to be feasible. Steel Way will also experience significant truck traffic upon completion of the proposed improvements. Based on these considerations, I am unable to support a waiver of this requirement.

67. The proposed right-of-way shall not be shown on the demolition plans (119-52.J).

68. The frontage along Mount Pleasant Road and the Steel Way extension shall be improved in accordance with 119-52.J or as indicated on the Township Official Map, whichever is greater. Pavement widening shall be provided for the southern half of Mount Pleasant Road that fronts the Franklin B. Greiner property (tax parcel #4611537900000). Concrete curbing and sidewalk shall be provided along both sides of Mount Pleasant Road and Steel Way (119-52.J(3)(a) & 119-53.B(1) / 119-53.C(1)).

69. Pavement widening shall be provided for Stauffer Road (119-52.J(3)(a)). The applicant has requested a waiver of this requirement.

Waiver response: The proposed design encourages traffic flow away from Stauffer Road. There are no proposed access drive intersections with Stauffer Road and the applicant proposes to widen the existing intersection of Stauffer Road and Mount Pleasant Road. Based on these considerations, I have no objections to a deferral of the Stauffer Road widening with the condition a deferral agreement be executed in a form acceptable to the Township Solicitor.

70. The developer shall take all necessary action to obtain PennDOT permits and/or approvals to install the necessary improvements to the state roadway (i.e. Mount Pleasant Road) (119-52.J(3)(e)).

71. Turning lanes shall be provided within Mount Pleasant Road to facilitate turning movements at the proposed access drive intersections with Mount Pleasant Road (119-52.K(5)).

72. A note shall be provided which states that no structures, landscaping or grading may be constructed, installed or performed within the area of the clear sight triangle which would obscure the vision of motorists. Deeds to lots which contain clear sight triangles shall provide the same restrictions (119-52.L).

73. The applicant shall confirm the grades shown in the Stopping Sight Distance table for Driveway #2, the Steel Way and Mount Pleasant Road intersection, and the Stauffer Road and Mount Pleasant Road intersection. The proposed contours are inconsistent with zero percent grade shown in the table (119-52.L(a)[2]).

74. All permanent cul-de-sac streets shall have a minimum length of 250 feet (i.e. Steel Way) (119-52.M). The applicant has requested a waiver of this requirement.

Waiver response: The proposed extension of Steel Way to Mount Pleasant Road will result in the existing Steel Way cul-de-sac street having a length less than 250 feet. Upon the extension of Steel Way, the remaining cul-de-sac will serve one property and one driveway. Based on these considerations, I am unable to support a waiver of this requirement. I recommend that the Township consider vacating the right-of-way surrounding the existing cul-de-sac and the applicant adjust the right-of-way such that the center line of the proposed and

existing Steel Way cartway corresponds with the existing and proposed right-of-way center line.

75. Streetlighting shall be provided along all new streets located within the designated growth area (119-52.O). The extension of Steel Way shall meet this requirement.
76. The pavement and subbase material and minimum compacted depth shall be in accordance with Appendix No. 16 (119-52.R(1)). Construction details for the proposed Steel Way extension and Mount Pleasant Road and Stauffer Road widening (i.e. collector paving) shall be provided.
77. The following note shall be added to the plans: "All roads and streets shall be performed in accordance with the current version of the Pennsylvania Department of Transportation Publication 408. The contractor shall obtain construction materials from PennDOT approved suppliers as listed in PennDOT Bulletin 15. The contractor shall provide PennDOT approved mix designs and certificates of compliance, Form CS-4171, for all materials provided for the work. Delivery tickets shall be provided for all materials." (119-52.R(7)).
78. The Sanitary Sewer Trench shall specify the material above the Compacted Suitable Soil Material in grass areas and proposed paved areas (119-52.R(8)(a)).
79. A trenching detail shall be provided for stormwater conveyance pipes in existing paved areas (119-52.R(8)(b) & 113-37.C(3)(a)).
80. The Sanitary Sewer Trench and Waterline Trench details shall specify that the remainder of the trench above the pipe bedding shall be filled in uncompacted lifts of no more than eight inches, compacting each lift to 90% proctor density. The Storm Sewer Trench detail shall specify the remainder of the trench above the pipe bedding be filled in uncompacted lifts of no more than eight inches. The compaction requirements shall be provided for the PennDOT 2A stone shown in the Storm Sewer Trench (119-52.R(8)(a)[2], 119-52.R(8)(b)[2] & 113-37.C(3)(a)).
81. The pavement and subbase material and minimum compacted depth, as well as the trench widths, shown in the Sanitary Sewer Trench and Waterline Trench details shall be in accordance with Appendix No. 17 (119-52.R(8)(b)[3]).
82. A vertical profile shall be provided for the proposed access drives (119-52.S(3)).
83. A note shall be added to the plan indicating that the access drives do not qualify for dedication to the Township and that the landowner shall assume all responsibility for its maintenance and repair. A vertical profile, horizontal alignment information and a cross section detail shall be provided for the proposed access drives (119-52.S(3)).
84. Access drives shall be separated by 200 feet from other access drive intersections with streets (119-52.S(3)(d)). Please note that if the right-of-way for the cul-de-sac is vacated by the Township, the proposed design for the cul-de-sac access drive would not meet this requirement.
85. No more than two access drives shall be located on a single street frontage (119-52.S(3)(g)).
86. Access drive widths shall be added to the plan where the proposed access widths are greater than 34' (119-52.S(3)(h)).
87. The access drives shall be subject to the approval of PennDOT (119-52.S(3)(m)).
88. The applicant shall address the traffic engineering comments provided by Transportation Resource Group dated January 17, 2023 (119-52.S(4)(c)).
89. The slope requirements for the ADA accessible parking spaces shall be shown on the plans (119-53.A(2)).

90. The parking spaces adjacent to the concrete sidewalks shall include a wheel stop to prevent overhang of parked vehicles into the sidewalk, or a four foot separation shall be provided (119-53.A(3)). The locations of the wheel stops shown in the Concrete Wheel Stop detail shall be shown on the plan view.
91. Sidewalks shall be provided within the development for access to the industrial facilities (119-53.B(2)).
92. The Sidewalk Adjacent To Curb and Concrete Sidewalk construction details shall specify that the 4" compacted aggregate subbase shall be PennDOT 2B aggregate (AASHTO #57) (119-53.B(4)(a)).
93. Sidewalks shall be a minimum of five feet wide per Appendix No. 16 (119-53.B(4)(a)). The Sidewalk Adjacent To Curb and Concrete Sidewalk construction details indicate the sidewalk width varies; however, the plan view does not show a varying width for the proposed sidewalks.
94. The sidewalk details shall indicate a 2% maximum cross slope (119-53.B(9)).
95. The Typical 8" Vertical Curb detail should include the 2B stone subbase per Appendix No. 16 (119-53.C(2)(a)).
96. The Typical 8" Vertical Curb detail shall include the requirement for half inch expansion joints at 100 feet maximum and adjacent to all inlets and other structures (119-53.C(2)(a)).
97. The Typical 8" Vertical Curb detail shall include the requirements for contraction joints per Appendix No. 16 (119-53.C(2)(a)).
98. A note shall be added to the plan with the requirement that nothing shall be placed, planted, set or put within an easement that would adversely affect the function of the easement or conflict with the easement agreement (119-56.B). This note shall also be included in all deeds for lots which contain an easement.
99. The Proposed Retaining Walls #1 through #4 shall be located outside the drainage easements (119-56.B).
100. Access easements shall be provided (119-56.D, 119-56.E, 113-31.R & 113-31.Q).
101. A note shall be added to the plans that clearly identifies who has the right of access and responsibility of maintenance for drainage easements (119-56.E).
102. The proposed drainage easements shall be dimensioned. Drainage easements shall be provided around the entire proposed stormwater BMPs to allow for their maintenance, repair, and reconstruction (119-56.E).
103. A note shall be added prohibiting excavation, the placing of fill or structures and any alternations that may adversely affect the flow of stormwater within any portion of the easement. Requirements for the drainage easements shall be included in the new deed. The applicant shall be responsible for completing a declaration of easement and stormwater management agreement in a form that is acceptable to the Township Solicitor (119-56.E & 113-31.R).
104. Snow removal stockpile easements shall be provided at all intersections. A legal description of this easement shall be provided prior to approval of the final plan (119-56.G).
105. Conservation easements shall be provided surrounding the limits of riparian corridors, wetlands, floodplains, mature forests and other environmentally sensitive areas as defined by Chapter 135, Zoning (119-56.H & 119-32.B(6)).

106. A note on the plans shall indicate when the monuments are to be set (119-57.H).
107. The 100 year floodplain shall be established for all watercourses and delineated by a hydrologic report (119-58.B(1)).
108. Provide a landscape plan note indicating that the top of the main order root shall be planted no lower than one or two inches into the soil (119-59.B(1)).
109. Provide a landscape note that staking and wiring of trees shall be removed within one year of planting (119-59.B(3)).
110. Provide a landscape plan note indicating that all required landscape plants shall be maintained and guaranteed for a length of 18 months from the date of planting. No more than 1/3 of the tree or shrub shall be damaged or dead without replacement. Replacement plants shall conform to all requirements of this section and shall be maintained after replanting for an additional 18 months (119-59.C).
111. Street trees shall be provided along all new streets (i.e. the Steel Way extension) (119-59.G).
112. Existing wooded areas shall be protected. At least 20% of existing woodlands shall be maintained or replaced immediately following construction. The tree protection area must be indicated on the plans. Trees to be saved shall be marked prior to construction with the edge of the protected area marked with a 48" high fence (119-59.H).
113. The kind of fire hydrants shall be shown on the plans (119-60.B(2)).
114. Any action taken on waiver requests, dates, and any conditions of approval shall be added to the cover sheet (119-91.C & 113-96).

Stormwater Management Ordinance

115. Evidence of NPDES and E&S permit approval by the Lancaster County Conservation District shall be provided (113-31.D, 113-45.B & 113-45.C).
116. The applicant indicates in the PCSM Report narrative that approximately 1.29 acres of roadway reconstruction will not require stormwater management. Per Appendix E of PennDOT Publication 584 and Chapter 102, certain Road Maintenance Activities (RMAs) shall be exempt from NPDES permit requirements. The applicant shall confirm whether the areas of proposed roadway reconstruction are RMAs as defined by Pub. 584 and/or Ch. 102 (113-31.E).
117. Erosion and sediment control BMP's shall be provided (113-31.E & 113-43.K). The Erosion & Sediment Control Plans and Erosion & Sediment Control Details referenced on the Cover Sheet were not provided with the submission, therefore a complete review of the erosion and sediment control could not be completed at this time.
118. The carbonate geology certification shall be added to the plan (113-31.J.(4)).
119. It shall be demonstrated that a minimum depth of 24 inches is provided between the bottom of MRC facilities #1, 3, and 4 and the limiting zone (i.e. the depth to the limiting zone should be investigated in the same location as the location facilities) (113-31.L(1)).
120. The stabilized infiltration rate is to be determined in the same location and within the same soil horizon as the bottom of MRC facilities #1, 3, and 4, as well as SWM/BMP Facility #2 (113-31.L(2)(a)). The locations of the infiltration tests/test pits shall be shown on the plans.
121. The limit of disturbance shall be shown on the plan (113-31.N(3)).
122. The existing wetlands shall be protected during construction. These measures shall be shown on the plans (113-31.N(3)).

123. Prior to construction, a tree protection zone shall be delineated. All trees scheduled to remain during construction shall be marked. No construction, storage of material, temporary parking, pollution of soil or regrading shall occur within the tree protection zone. A 48" high fence shall be placed along the tree protection boundary (113-31.N.(4)).
124. To the maximum extent practicable, areas proposed for infiltration BMPs shall be protected from sedimentation and compaction during the construction phase to maintain maximum infiltration capacity. Staging of earthmoving activities and selection of construction equipment shall consider this protection (113-31.O). The plan shall show the provisions for protecting the stormwater management facilities during construction.
125. To the maximum extent practicable, infiltration BMPs shall not be constructed nor receive runoff from disturbed areas until the entire contributory drainage area to the infiltration BMP has achieved final stabilization (113-31.P). A construction sequence shall be provided which complies with this requirement.
126. A minimum thirty-foot-wide access easement shall be provided for all stormwater facilities with tributary areas equal or greater than 1,000 square feet and not located within a public right-of-way (113-31.Q).
127. A note shall be added prohibiting excavation, the placing of fill or structures and any alterations that may adversely affect the flow of stormwater within any portion of the easement (113-31.R).
128. There is a location (i.e. eastern property line of the subject tract) where flow leaves the site onto the adjacent "Land Now or Formerly of Franklin B. Greiner Jr." lot. This location shall be analyzed as a separate discharge point (113-32 & 113-33). A pre/post-development analysis shall be provided at this point to ensure that the total volume and rate control requirements have been met.
129. The following items in the Managed Release Concept Design Summaries shall be resolved (113-32):
 - a. The post development peak rates for the two- to one hundred-year storms are inconsistent with the two- to one hundred-year storm outflows in the post-development routings for MRC Facility #1, #3, and #4.
 - b. Supporting calculations shall be provided for the equivalent contributing impervious area to BMP (acres) values.
 - c. The total drainage area to BMP (acres) is inconsistent with the inflow area in the pond reports for MRC Facility #3.
130. The proposed MRC facilities shall be in accordance with the Manage Release Concept design standards as follows (113-32):
 - a. Evidence shall be provided for the separation distances for MRC Facility #1, 3, and 4 shown in the MRC Design Summary worksheets.
 - b. The soil depth above the proposed underdrain invert shall be at least 24" for MRC Facility #3 and #4.
131. Volume control BMPs shall be designed so that the post-development total runoff volume for all storms equal to or less than the two-year twenty-four-hour storm event shall not be increased from the predevelopment total runoff (113-32.A(1)). The proposed MRC facilities do not meet the Township's volume control requirements; therefore a modification would be required.

132. Twenty percent of existing impervious shall be considered meadow in good condition (113-32.A(2)(b)). This shall apply to existing roadway areas that are within the limit of disturbance which do not meet the definition of an RMA.
133. The Ordinance requires the loading ratio for the total drainage area to infiltration area to be less than 8:1 and the impervious drainage area to infiltration area to be less than 5:1 (113-32.A.(2)(c)). The applicant has requested a waiver of this requirement. Since SWM/BMP Facility is not designed for infiltration and all other BMPs are MRC facilities that do not use loading ratios, a waiver of this requirement is not needed for the proposed design.
134. The peak inflow and outflow discharges shown in the dewatering calculations are inconsistent with the inflow and outflow discharges shown in the 100 year storm pond reports (113-32.D).
135. The "Infiltration Period" shown in the Structural BMP Volume Credits table shall be consistent with the "Time To Dewater" in the SWM/BMP Facility Dewatering section of the PCSM narrative for Facility #1, #3, and #4 (113-32.D).
136. Storage facilities shall completely drain the volume control storage over a period of not more than 72 hours from the end of the design storm (113-32.D). Evidence shall be provided that MRC Facility #1 meets this requirement.
137. The volume control storage which will be used for rate control is that storage which is available within 24 hours based on the stabilized infiltration rate (113-32.E.(2)). Evidence shall be provided that MRC Facility #1 meets this requirement.
138. Normally dry, open-top, storage facilities shall completely drain the rate control storage over a period of time less than or equal to 24 hours from the peak one-hundred-year water surface design elevation (113-33.C). MRC facilities #1, 3, and 4, as well as SWM/BMP Facility #2 shall meet this requirement.
139. The conveyance calculations show that hydraulic grade lines (HGLs) for numerous storm pipes are above the ground/rim elevations. This indicates that the pipes do not have adequate capacity to convey the required design storms (113-34.G).
140. Channel #3 and #4 shall be designed for the twenty-year storm (113-34.G(1)).
141. Channel #5A and #5B shall be designed for the fifty-year storm event since they are conveying water originating from off site (113-34.G(2)).
142. Conveyance facilities that direct runoff to the peak rate BMPs shall be designed for the 100-year storm (113-34.G(3)). Channel #1 shall be designed for the 100-year storm to ensure the entire post-development Channel #1 sub drainage area is bypassed around the peak rate control BMP.
143. The Inlet Reports show that there is bypass flow for the 100-year storm event at several inlets located at drainage area boundaries. This indicates that the 100-year runoff is not captured by these inlets and conveyed to the appropriate BMP as assumed in the rate control calculations (113-34.G(3)).
144. The Inlet Report shows that the ponding depth exceeds the proposed curb height for the 100-year storm event at Inlet I-24 located at drainage area boundaries. This indicates that the 100-year runoff is not captured by this inlet and conveyed to the appropriate BMP as assumed in the rate control calculations. (113-34.G(3)).
145. The Inlet Report shows that the 100 year storm ponding depth for Inlet 9-2 is 0.88 feet. Based on the proposed grading around Inlet 9-2, this ponding may overflow into MRC Facility #4 (113-34.G(3)). Additional spot elevations should be provided to confirm that this will not occur.

146. The drainage area boundaries for the pre development Watershed Areas #7, 8, and 9, the post-development Watershed Area #8- Undetained, and the sub drainage areas for Inlets 2-4A and 5-3A, as well as Channel 5A, shall be revised to reflect the proposed grading (113-35.B).
147. The impervious area in pre-development shown in Worksheet 4 is inconsistent with the impervious area shown in the pre-development hydrograph (i.e. Subcatchment 9S) for Watershed Area #9 (113-35.B).
148. The post-development areas of Meadow (Soil Type C) and Open Space (Soil Type B) shown in Worksheet 4 for Watershed Area # 1 are inconsistent with the sum of the areas of Meadow (HSG C) and Open Space (HSG B) shown in the runoff coefficient calculations in the post-development hydrographs for Watershed Area #1 (113-35.B).
149. Grading, Drainage, & Utility Note 14 indicates that the final building design is required to confirm downspout locations (113-35.B). The downspout locations and if necessary, updated design calculations, for roof leaders shall be provided prior to final plan approval.
150. Antecedent Moisture Condition 2 shall be used in all non-carbonate areas for the SCS method (113-35.C).
151. The total project site area and area of total earth disturbance shown in the DEP General Information worksheet are inconsistent with the total site area and managed area shown in Worksheet 4 for Watershed Area #9 (113-35.F).
152. The upstream flows shall be included for Channel #2B, #2C, and #2D in the channel hydrology calculations (113-35.F).
153. Post-development runoff coefficients for Channels 5A and 5B shall be based on winter or poor land use conditions since they convey off-site discharge (113-35.G).
154. Runoff coefficient calculations shall be provided for Inlet 2-4 (113-35.G).
155. The runoff coefficient calculations for the proposed channels shall provide the hydrologic soil group(s) of the impervious land use (113-35.H(1)).
156. The calculations for the post-development time of concentrations for discharge points 001 (Subcatchment 1D in PCSM Report), 003, and 009 shall be provided. The time of concentration flow paths for post-development discharge points 001, 003, and 009 shall be shown on the plans (113-35.I).
157. The unpaved shallow concentrated flow shown in the pre-development time of concentration calculation for Watershed #3 shall be revised to reflect the existing surface description (i.e. paved) (113-35.I).
158. The cover depth (i.e. "F") for outlet structure OS-3 shown in the Permanent MRC Outlet Structure detail is inconsistent with the proposed diameter of the underdrain and the proposed six inches of stone around the underdrain (113-37.A) (i.e. the cover depth is insufficient given the proposed underdrain design).
159. The bottom elevation for SWM/BMP Facility #2 shown in the post-development pond report (i.e. Pond 2P) is inconsistent with the bottom elevation shown in the Permanent SWM/BMP Facility Outlet Structure construction detail (113-37.A).
160. Pretreatment is required for MRC Facility #3 and #4 (113-37.A.(1)(c)[2]).
161. Watertight joints are required for the outlet piping (113-37.A(1)(d)[5]).

162. The maximum allowed width for a spillway is 50 feet (113-37.A(1)(e)[3]). The spillways for MRC Facility #1 and SWM/BMP Facility #2 do not meet this requirement. The applicant has requested a modification of this requirement.

Modification response: The proposed spillway width for the MRC Facility #1 is 120 feet and the proposed spillway width for SWM/BMP Facility #2 is 70 feet. MRC Facility #1 is designed to route all storms (i.e. two year to one hundred year) over the facility's spillway, while the two year to one hundred year storms are not designed to be routed through the spillway of SWM/BMP Facility #2. The waiver request states that due to the high quantity of stormwater runoff, utilizing a maximum emergency spillway of 50 feet is not practical. However, there are potential alternatives that may allow the ordinance requirements to be met (e.g. multiple spillways, armoring the spillway, etc.) Based on these considerations, I am unable to support a waiver of this requirement.

163. The Facility Cross-Section At Permanent Outlet Structure construction detail shall specify that the impervious core material shall have at least 30% passing the No. 200 sieve (113-37.A.(3)(a)[1]).

164. The impervious core shall extend to six inches below the spillway elevation (13-37.A.(3)(a)[2][b]).

165. The core shall extend four feet below any pipe penetrations through the impervious core (113-37.A.(3)(a)[2][c]).

166. The pipe size for Basin No. 4 shown in the Concrete Anti-Seep Collar Permanent Basin detail is inconsistent with the proposed diameter (36") of the outlet pipe for outlet structure OS-4B of MRC Facility #4 (113-37.A(3)(b)). The collar size shown in Standard Worksheet #18 shall be based on the proposed 36" outlet pipe.

167. A note shall be added to the plan to specify that the embankment fill material shall be free of roots, stumps, wood, rubbish, stones greater than six inches, frozen or other objectionable materials (113-37.A.(3)(c)).

168. A note shall be added to the plan to specify that embankments shall be compacted by sheepsfoot or pad roller. The loose lift thickness shall be nine inches or less, depending on roller size, and the maximum particle size is six inches or less 2/3 of the lift thickness. Five passes of the compaction equipment over the entire surface of each lift is required. Embankment compaction to visible nonmovement is also required (113-37.A.(3)(d)).

169. The location of the underdrain shown in the MRC Cross-Section detail is inconsistent with proposed bottom media elevations shown in the MRC Cross-Section detail and the invert elevations of the underdrain shown in the Permanent MRC Outlet Structure construction detail (e.g. the 6" of AASHTO #57 on the top of the underdrain would extend into the amended soils) (113-37.A(4)(b)).

170. The 36" pipe shown in the Permanent MRC Outlet Structure construction detail shall be included in the post-development routing (i.e. Pond 4P) for MRC Facility #4 (113-37.A(5)).

171. A spillway shall be provided for MRC Facility #4 (113-37.A(6)).

172. Calculations shall be provided to confirm that the spillways are stable in the non-vegetated condition and that the underlying substrate is nonerosive in both the non-vegetated and vegetated conditions (113-37.A(6)(a)).

173. The ordinance only allows the spillway to be used to convey flows greater than the fifty-year design storm (113-37.A(6)(b)). The spillway for MRC Facility #1 does not meet this requirement.

174. The 100 year peak inflow used in the emergency spillway design for SWM/BMP Facility #2 shall be the sum of the 100 year peak inflow to MRC Facility #1 and the 100 year peak inflow to SWM/BMP Facility #2 (113-37.A(6)(c)).
175. Design calculations shall be provided for the roof leaders (113-37.C).
176. One foot of cover shall be provided to the surface in non-vehicular areas outside the right of way (119-37.C(1)(a)[3]). The conveyance pipe between Outlet Structure OS-3 and Inlet 4-1 does not meet this requirement.
177. Stormwater conveyance pipes shall cross streets at an angle between 75 and 90 degrees (e.g. Inlet 6-4 to Inlet 6-3, Inlet 7-3 to Inlet 7-2, etc.) (113-37.C(1)(a)[5]).
178. Inlet grates shall be depressed (113-37.C(1)(b)[2]). Grading, Drainage, & Utility Note #8 shall specify the Type 'M' inlets meet this requirement.
179. The minimum longitudinal slope for swales is 1% (113-37.C(1)(d)[4]). There are numerous swales whose bed slopes shown in the Channel Design Data worksheets are inconsistent with the proposed grading.
180. The bottom width to flow depth ratio for the Swales 1, 2B, 2C, and 2D exceeds 12:1 (113-37.C(1)(d)[6]).
181. The Storm Sewer Trench detail shall specify the backfill material be free of large (i.e. not exceeding six inches), objectionable, or detritus material and that the backfill beneath lawns and open areas be indigenous to surrounding soil material (113-37.C(3)(a)).
182. Watertight joints shall be provided where conveyance pipe sections are joined (113-37.C(3)(d)).
183. The gutter spread based on the twenty-five-year storm shall be no greater than $\frac{1}{2}$ of the travel lane and have a maximum depth of three inches at the curblin (113-37.C(4)(b)). The gutter spread of Inlets 5-2, 6-2, and 7-1 and the gutter depth of Inlet 6-2 do not meet these requirements.
184. The flow depth within intersections shall be evaluated (113-37.C(4)(c)).
185. The grading plan shows a defined swale east of MRC #1 (north of the warehouse) for which calculations and construction details have not been provided (113-37.C(5)(a)).
186. Swales shall be evaluated for stability and capacity based upon the "n" values specified (113-37.C(5)(c)[1]).
187. The capacity of Channel 3 shall be analyzed for the minimum longitudinal slope (113-37.C(5)(c)[1]).
188. Design information for the riprap aprons shall be provided (113-37.C(8)).
189. Figures 9.3 and 9.4 shall be provided for each riprap apron. Evidence shall be provided for the flow values shown in the Standard E&S Worksheet #20 (113-37.C(8)).
190. The landowner shall execute the final documents prior to final plan approval (113-41.B).
191. A label for the post development sub drainage area Inlet 3-5B shall be provided (113-42.A).
192. The SWM site plan shall include a statement, signed by the landowner, acknowledging the SWM facilities to be permanent fixtures that cannot be altered or removed unless a revised plan is approved by the Township (113-43.D).
193. A SWM site plan approval certification shall be added to the plans (113-43.E).

194. A note shall be added to the plan informing the owner that the Township shall have the right of entry for the purposes of inspecting all stormwater conveyance, treatment, or storage facilities (113-43.G).
195. All existing manmade features within 200 feet of the development site boundary shall be shown (113-43.I(5)).
196. The inverts of the conveyance pipes into the inlet near the eastern property line of the Kinsey Realty tract shall be provided. The 15" CMP entering the inlet is shown as being backsloped (113-43.I(6)).
197. The location of conveyance pipe(s) leaving the existing inlets within Steel Way shall be shown on the plans (113-43.I(6)).
198. A note identifying any recorded stormwater management agreements affecting the subject property (or that none exist) shall be included on the plans (113-43.I(6)).
199. Proposed contours shall tie into existing grade (113-43.J(1)).
200. The proposed 8" water line shall be shown on the stormwater profiles (119-43.J(5)).
201. A construction detail shall be added for the proposed cleanouts (113-43.J(5)).
202. The profiles shall indicate the proposed type of inlet top (i.e. Type "M" or Type "C") and type of inlet box for all proposed inlets (113-43.J(5)).
203. The proposed Retaining Wall #3 shall be shown on the 1-8 to 1-0 storm sewer profile (119-43.J(5)).
204. The proposed lengths for the roof leaders shall be provided on the plans (113-43.J(5)).
205. Portions of the narrative found in the PCSM Report appear to need corrected and/or revised for clarity (113-44.B). Please see the mark ups in the PCSM Report.
206. The expected project schedule shall be added to the plans (113-44.E).
207. Since a PennDOT Highway Occupancy Permit is required for the proposed intersections with Mount Pleasant the permit(s) shall be part of the SWM site plan and must be obtained prior to unconditional SWM site plan approval (113-45.C).
208. A note shall be added to the plans to specify that following approval of the as-built plan by the Township Engineer, the applicant shall submit the SWM site plan for recordation in the office of the Recorder of Deeds (113-58.C).
209. An operation and maintenance (O&M) agreement shall be provided and recorded with the final plan (113-62). The O&M agreement shall indicate the location and responsibility for maintenance of off-site facilities located on the Franklin B. Greiner Jr. (tax parcel #4615654800000 and Nelson Hollinger (tax parcel #4611623900000) properties (113-43.F).
210. The Township reserves the right to accept or reject the ownership and operating responsibility of any SWM facilities. The plans indicate that the Township will be responsible for MRC Facility #4 located within the right-of-way of Steel Way. Since these facilities control stormwater generated by improvements located within a private development, I recommend that responsibility remain with the developer/property owner(s). Channels 2A, 2B, 2C, 2D, 3, 4, and 5B and endwall EW 6-0 are partially located within the Township right-of-way. I recommend that these facilities be revised to be located entirely on the developer's property (113-64.A).

Traffic

211. The proposed development is located within the Transportation Service Area established for the Mount Joy Township Traffic Impact Fee Ordinance. Therefore, the development shall be assessed a traffic impact fee based on the number of new P.M. peak hour trips generated by the development. The number and type of dwelling unit per phase shall be provided to determine the Traffic Impact Fee in accordance with Chapter 125.

If you should have any questions or need additional information, please do not hesitate to contact me at bencraddock@lancastercivil.com or via telephone at 717-799-8599.

Sincerely,



Benjamin S. Craddock, PE, President

LANCASTER CIVIL

cc: Patricia Bailey, Township Secretary (via email)
Josele Cleary, Esquire, Township Solicitor (via email)
Christopher Schwab, PE, Transportation Resource Group, Inc. (via email)
Del Becker, PE, EAWA (via email)
Nick Viscome, ERSA (via email)
Byrne Remphrey, PE, CDM Smith (via email)
Alex Rohrbaugh, AICP, Sr. Planner, LCPC (via email)
Joe Peters, Panattoni Development Company, Inc. (via email)
Jeremy Bittinger, EIT, Landworks Civil Design, LLC (via email)