



December 28, 2020

Via Hand Delivery

Ms. Christine Woodbury
Planning Board Secretary
Township of Franklin
475 DeMott Lane
Somerset, NJ 08873

Re: **Preliminary and Final Major Site Plan**
490 Elizabeth Avenue
Block 514, Lot 34
Franklin Township (Somerset), Somerset County, NJ
HLE Project #19201

Dear Ms. Woodbury,

Regarding the above reference project, please find enclosed the following documents for your review:

- Twenty-five (25) sets of the Preliminary & Final Major Site Plan revised to December 23, 2020
- Twenty-five (25) copies of the Vehicular Maneuvering Plan dated December 23, 2020
- Three (3) copies of the Stormwater Management Report revised to December 23, 2020
- Three (3) copies of the Operation and Maintenance Manual revised to December 23, 2020
- Twenty-five (25) sets of the Architectural Floor Plans and Elevations prepared by Cerminara Architects revised to December 23, 2020

The above documents have been revised to reduce the proposed development from the initial site plan. Previously, the proposed building was 63,477 square feet and the enclosed plans now propose a lesser area of 48,037 square feet. Parking, loading, and all other appurtenant site improvements have been reduced accordingly. These revisions are due to the reduction in developable area caused by the DRCC stream corridor encroaching onto the subject property. The stream corridor limits development on the property to outside of a 100' buffer from the 100-year floodplain of the existing regulated water/stream located on the adjacent Block 514, Lot 33 property. Review of the 100-year floodplain is currently pending with the DRCC application. Review of the Flood Hazard Area is also required by the NJDEP.

Additionally, the above documents have been revised to address the comments in the review letters prepared by the board's professionals as follows:

Mark Healey, PP, AICP, Director of Planning/Senior Zoning Officer for Township of Franklin Memorandum dated November 2, 2020

1. *As indicated above the application requires a variance from the lot frontage requirements of the M-1 zone (300 feet required – 259.45 feet existing/ proposed).*

This item has been listed an existing non-conformity on the zoning schedule shown on Sheet SP-01.

2. *I defer to Traffic Safety and/or the reviewing engineer whether traffic control signage and/or pavement markings should be modified/ supplemented to better enforce the one-way traffic circulation proposed on the site.*

No response required.

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3. *It is recommended that the applicant review the landscaping selections for deer resistance (thula occidentalis) and that spacing of proposed plantings take into considerations the size of the proposed trees (e.g., the proposed evergreen trees are spaced very close together).*

The proposed tree plantings be substituted for Cedar species. The plantings are approximately 6' on-center which are the minimum spacing for these tree species.

4. *Per the tree replacement calculations on the plan, the required tree replacement value is 828 trees. The site plan proposes 509 qualifying replacement trees leaving a deficit of 319 trees. The remaining deficit shall be met per contribution to the Township Shade Tree Fund per Chapter 222.*

Tree Replacement calculations have been provided on the Landscaping Plan (Sheet SP-11)

5. *No sidewalk is proposed along the site frontage. It is noted that no sidewalks exist in the vicinity of the site along Elizabeth Avenue. The Board may wish to discuss whether a sidewalk should be required along the site frontage or whether the Board should require a payment-in- lieu.*

No response required.

6. *The development will be subject to collection of Non-Residential Development ("COAH") Fees equal to 2.5% of equalized assessed value.*

Agreed.

Environmental Commission Memorandum dated November 18, 2020

This warehouse proposal includes a substantial amount of tree removal. The Commission realizes that they have studied stormwater runoff. The tree removal does not help to ease stormwater runoff. This proposal could benefit by considering a green (vegetative) roof.

The enclosed site plan has been modified to incorporate the required Stream Corridor buffer which will save more trees than previously proposed. Additionally, the project redesign incorporates green techniques such as vegetated filter strips and vegetated swales to the maximum extent practicable such that this project meets the Non-Structural Point System spreadsheet requirement imposed by the Delaware and Raritan Canal Commission (DRCC). Additionally, proposed stormwater management systems meet or exceed the required reductions in peak stormwater quantity discharge. Therefore, no additional stormwater measures would be required.

The use of a green roof would reduce stormwater runoff, reduce heating and cooling costs and increase the life of the roof. The 67,000 square feet roof could also support a solar cell array. This would reduce operating costs. Both suggestions would help to combat Global Warming.

The applicant may consider these options in the future. Please note that the proposed green technique stormwater measures and Stream Corridor buffer are a significant enhancement to the initial site plan proposal and exceed what is required for approval from the various permitting agencies such NJDEP and DRCC.

Robert J. Russo, PE, PP, CME, Township Engineer Letter dated November 30, 2020

B. General Site Improvements Engineering and Planning Comments

7. *An Engineering Cost Estimate will be required once final plans are signed-off on by the Board. Upon approval, applicant shall provide appropriate bonds and Engineering inspection fees and attend a pre-construction meeting, prior to any site work.*

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Agreed.

8. *All fees shall be paid by the applicant at the time of adoption of a resolution of site plan approval for the cost of making upgrades and modifications to the geographic information system (GIS) (§112-329).*

Agreed.

9. *At the time the final plans are submitted for signature of the municipal officials, the applicant shall submit CAD-generated data files, prepared by a New Jersey licensed land surveyor, directly translatable into an identical image of the plan per the requirements of Ordinance §112-329.*

Agreed.

10. *Note: An As-Built Plan prepared by a licensed Land Surveyor is to be submitted to the Township prior to any Certificate of Occupancy inspection or the release of performance bonds. Same should be noted on the site plan.*

Agreed.

11. *The applicant provided parking calculations on sheet no. SP-01. The applicant's engineer utilized a manufacturing type of use for the calculations in lieu of evaluating same for the proposed warehouse use. The applicant should revise the calculation in accordance with Ordinance §112 — Schedule 4. It appears that the application will still comply with the parking requirement of the ordinance. In addition, the northeastern most parking area east of the proposed building notes that 6 parking spaces are proposed; however, it appears 7 parking spaces are proposed. The total number of parking spaces delineated on the site plan is 58, in lieu of the 57 spaces noted.*

The parking calculation on the Cover Sheet SP-01 have been revised accordingly.

12. *Based on the 58 total parking spaces, three (3) barrier free parking stalls are required, one (1) of which is required to be van accessible. The applicant is proposing four (4) accessible spaces, two (2) are proposed to be van accessible; therefore, the ADA parking demand is met.*

Due to the reduction in the project as mentioned above, the number of required ADA parking spaces is two (2). The proposed ADA parking spaces are shown on Sheet SP-03.

13. *Revise note no. 10 of the Site & Demolition Notes on sheet no. 1 to state, 'all concrete for the site shall be made...of 4,500 psi.'*

The note has been revised accordingly as shown on Sheet SP-01.

14. *Delineate location of the proposed handicap parking signage.*

The proposed handicap parking signage has been labeled on Sheet SP-03 as R7-8(V) which is the van accessible ADA parking sign designation from the MUTCD.

15. *Depressed Belgian Block curb should be installed at the driveway entrance and exit, consistent with the neighboring properties along Elizabeth Avenue. Revise plan accordingly.*

Sheet SP-03 has been revised to propose depressed Belgian Block Curb along the proposed driveways accordingly.

16. *The East Elevation of sheet no. A2 of the architectural plan delineates a staircase and railing at the northern most door, the site plan does not reflect the same. Plan coordination is required.*

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The enclosed Architectural Floor Plans and Elevations have been coordinated with the enclosed Site Plan set.

17. *The West Elevation of sheet no. A2 of the architectural plan delineates a staircase and railing at the southernmost door, the site plan does not reflect the same. Plan coordination is required.*

The enclosed Architectural Floor Plans and Elevations have been coordinated with the enclosed Site Plan set.

18. *The South Elevation of sheet no. A2 of the architectural plan delineates a staircase and railing at the westernmost door, the site plan does not reflect the same. Plan coordination is required.*

The enclosed Architectural Floor Plans and Elevations have been coordinated with the enclosed Site Plan set.

19. *Relocate the proposed Accessible parking spaces servicing the eastern building line south, closer to the main building entrance.*

The enclosed Architectural Floor Plans and Elevations have been coordinated with the enclosed Site Plan set.

20. *Provide a detail of the proposed project sign.*

A detail of the proposed project sign has been added to Sheet SP-20 accordingly.

21. *Due to the heavy truck traffic, our office recommends the applicant install a heavy duty pavement section for all truck traffic areas.*

Sheet SP-03 has been revised to delineate the limits of the heavy duty and light duty asphalt pavement. All areas maneuvered by trucks are proposed to utilize heavy duty asphalt pavement sections.

C. TRAFFIC IMPACT STUDY COMMENTS

1. *The Applicant's Engineer should provide a site circulation plan showing the travel paths of the design vehicle to verify that the on-site circulation is adequate for service vehicles and the required emergency vehicle access (i.e. garbage trucks, delivery trucks, fire trucks, and rescue squad vehicles). In addition, ingress and egress turning movements for a WB-67 vehicle maneuvering the driveway should be provided, for further review.*

Please see the enclosed Vehicular Maneuvering Plan for the site circulation of WB-67 shown throughout the site.

2. *The design and placement of all traffic signs and striping shall follow the requirements specified in the latest "Manual on Uniform Traffic Control Devices for Streets and Highways," (MUTCD) published by the U.S. Department of Transportation and adopted by the N.J. Department of Transportation.*

Agreed.

3. *The Applicant's Engineer should provide intersection sight distance triangles that conforms to the latest AASHTO (American Association of State Highway and Transportation Officials) guidelines, as published in the current edition of A Policy on Geometric Design of Highways and Streets, for the driveway leading to Elizabeth Avenue.*

Sheet SP-03 has been revised to show the sight distance triangles conforming to AASHTO.

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4. *The Applicant's Engineer should design the proposed curb ramps, sidewalks, and crosswalks, to meet the latest ADA requirements. The Applicant's Engineer should provide turning spaces before and after proposed ramps as necessary at the required slopes and the locations of proposed detectable warning surfaces should be clearly indicated. This ADA compliance issue should be reviewed relative to all curb ramps, sidewalks, and crosswalks currently proposed under this project.*

Please refer to Sheets SP-03 and SP-04 for the location of ADA paths, curb ramps, etc. and the proposed grading of these improvements, respectively.

D. GRADING AND UTILITY COMMENTS

1. *The applicant is proposing the installation of a 2" sanitary force main along Heller Park Lane, between Jensen Drive and its terminus. The applicant shall two-inch mill and repave the entire pavement surface from edge to edge, or curb to curb for the full length of excavation, extending 25 feet from the ends of the excavation, in accordance with the Township specifications required per Ordinance §333-8.K.*

A note has been added to sheet SP-08 requiring repaving of Heller Park Lane accordingly.

2. *Plan sheet nos. SP-07 and SP-08 should be revised to delineate the proposed stationing shown on the profile, sheet no. SP-15.*

Sheets SP-07 and SP-08 have been revised accordingly.

3. *The applicant is proposing to relocate an existing fire hydrant near the southern driveway. Final location of same should be approved by the Township Fire Prevention Director and the Township Water Department.*

Agreed.

4. *It appears that an existing water main is located on the property. The applicant should provide the Township with an easement to encompass the existing water main. The applicant should provide easement deed, with metes & bounds descriptions for review prior to filing with Somerset County Clerk's Office.*

The limits of the proposed easement for the existing water main has been added to Sheet SP-03. We respectfully request that the submission of the easement deed be a condition of approval. It is agreed that this document should be reviewed by the Township prior to filing with Somerset County Clerk's Office.

5. *The applicant shall obtain a utility easement for the construction of the sanitary sewer force main along the neighboring property; Block 514, Lot 35. The applicant should provide easement deed, with metes & bounds descriptions for review prior to filing with Somerset County Clerk's Office.*

The limits of the proposed easement for the proposed sanitary sewer forcemain has been added to Sheet SP-07. We respectfully request that the submission of the easement deed be a condition of approval. It is agreed that this document should be reviewed by the Township prior to filing with Somerset County Clerk's Office.

6. *There are various notes on sheet no. SP-05 that state, 'Contractor to inspect condition of existing inlet structure. If determine to be in good condition, contractor to remove curb piece and install new type E frame grate over existing inlet structure.' All similar notes should be revised to include, 'Approval from the Township Engineering Office is required prior to modifying the structure.'*

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The note on Sheet SP-05 has been revised accordingly.

7. *The applicant should convert the existing Type B inlet castings within the entrance/exit driveway curblines to a Type B inlet casting with a driveway access back plate.*

Sheet SP-05 has been revised to propose a driveway backplate on the existing Type B Inlet casting.

8. *Label all proposed inlet grate elevations and bottom of curb grades on sheet no. SP-04, grading plan.*

Sheet SP-04 has been revised to add grate elevations and bottom of curb grades accordingly.

9. *The applicant should provide in table format for water mains/ utility crossings (including lateral crossings) with corresponding clearances to reflect the avoidance of conflicts with other underground utilities, as required.*

A Utility Crossing Table has been added to Sheet SP-05 accordingly.

10. *The applicant should add the following notes to the plans:*
 - *All constructions shall comply with the current rules and regulations/ or ordinances of Franklin Township, NJDEP, AWWA and all applicable regulatory agencies having jurisdiction.*
 - *The minimum clearances between water mains and sanitary sewers shall be in accordance with the State standards, i.e. Minimum horizontal clearance between water main and sanitary sewer in parallel shall be ten ft. (10'), Minimum vertical clearance between pipe crossing shall be eighteen inches (18") with the sanitary sewer below the water line. If such minimum vertical clearance cannot be provided, the sanitary sewer shall be encased in concrete ten ft. (10') from each side of the crossing or a total of twenty ft. (20').*
 - *Water mains crossing storm sewers or drains where the clearance between the pipes is less than eighteen (18") inches, pier supports for the storm line shall be provided in order to prevent the load transfer to the affected utility.*
 - *The minimum depth of cover for the water main shall be four (4') feet from the top of the pipe to the finished grade.*

The notes have been added to Sheet SP-06 accordingly.

11. *The applicant should address the following general grading comments:*
 - *Provide additional spot elevations so compliance with ADA design standards can be reviewed further for all proposed ADA parking spaces, ramps and landings;*
 - *Provide spot elevations within the parking lot and concrete walkways to demonstrate ADA compliance. Spot elevations should delineate the proposed ramp slope and ADA compliant landings (maximum cross and running slopes of 2%, respectively);*
 - *The flush TC 78.40 in the southwest corner of the parking lot near the extended detention basin appears to need either rip rap or full faced curb;*
 - *The existing contours near the northern property line shown on the survey are not shown on the grading plan. The existing contours should be delineating on grading so the tie in grading can be further reviewed;*
 - *The applicant's engineer should review the tie in grading along the southern property line;*
 - *The existing drainage path from Lot 36 to the PIQ is from south to north. The applicant is raising the grading along southern property line. It appears ponding water will be an issue along this property line. A swale should be provided along the southern property line ensuring no ponding water will occur. In addition, the existing contours shown on the survey do not match the grading plan in this location; the grading plan should be revised accordingly;*
 - *The grading will be reviewed further when the above has been addressed.*

Due to the substantial revisions to the proposed development, a new grading plan has been designed

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incorporating the above comments as shown on Sheet SP-04.

E. LANDSCAPING AND LIGHTING COMMENTS

1. *In accordance with the requirement of Ordinance §222- Trees, the applicant should provide a tree removal and replacement plan. Replacement calculations should conform to the requirements of the ordinance. Upon completion of same, this office defers to the Township Planner as to the adequacy of the tree replacement plan, as well as the adequacy of the proposed landscaping and buffering to adjacent properties, respectively.*

Tree replacement calculations have been provided on Sheet SP-02 (for the proposed tree removal count) and Sheet SP-11 (for the proposed tree planting count and deficit of replacement trees).

2. *The applicant shall revise the Landscaping Plan to include the following note: "All plant relocations/substitutions shall be submitted to the Township for review and approval prior to installation".*

The note has been added to Sheet SP-11 accordingly.

3. *The proposed light pole near the southern driveway appears to be in conflict with the relocated fire hydrant. Coordination is required.*

The Lighting Plan has been revised accordingly.

F. ENVIRONMENTAL IMPACT COMMENTS

1. *A Letter of Interpretation for the freshwater wetlands should be obtained from NJDEP to verify the limits of wetlands and the transition areas. The Applicant's engineer should provide the letter of interpretation, including the NJDEP stamped approved wetlands map, to verify the wetlands and buffers.*

An application to the NJDEP for the Wetlands LOI and related permits is currently pending. Stamped plans, LOI, and related approval documents from NJDEP will be forwarded to the Township once received.

2. *A Conservation/Preservation Area shall be created in accordance with Ordinance §112-147 of the Franklin Township Land Development Regulations. The Township preservation area boundary line shall be established using the most restrictive of the Flood Hazard Area, Stream Preservation Corridor and Wetlands Buffer (post transition area reduction and compensation) lines. A map shall be supplied delineating the limits of the Conservation/Preservation Area with bearings and distances and proposed Preservation Area Marker locations.*

We respectfully request that the Conservation/Preservation Area be a condition of approval as the Flood Hazard Area, Stream Corridor, and Wetlands Buffer delineations are currently under review with the NJDEP and DRCC.

3. *Provide a Conservation/Preservation Area Easement Deed, with a metes and bounds description, of the Township preservation area boundary line created by satisfying Comment #2. The deed shall be submitted for review and approval prior to filing with the Somerset County Clerk's Office.*

We respectfully request that the Conservation/Preservation Area be a condition of approval as the Flood Hazard Area, Stream Corridor, and Wetlands Buffer delineations are currently under review with the NJDEP and DRCC.

4. *Preservation Area Markers shall either be set or bonded for prior to application sign-off.*

Agreed.

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G. STORM WATER MANAGEMENT

1. *The property in question, Block 514 Lot 34, consists of approximately 5.50 acres. The parking lot will disturb approximately 4.74 acres of land and will create 3.27 acres of new impervious surface. The project exceeds the threshold of 1 acre of disturbance and $\frac{1}{4}$ acre of new impervious surface; therefore, it is classified as a major development for stormwater management purposes. In accordance with the Township Ordinance, major projects must comply with water quantity control, water quality and groundwater recharge standards.*

Agreed.

2. *The project site is located within the review zone of the Delaware and Raritan Canal Commission and the Applicant should obtain approval from the Commission. A copy of the permit should be provided to this office.*

Agreed. The applicant currently has an application pending with the DRCC.

3. *In accordance with the Impact Assessment Report, freshwater wetlands were identified within the limits of the property in question. The Applicant should obtain a Letter of Interpretation from NJDEP to verify the limits and resource value classification of the wetlands associated with the property. A copy of the LOI should be provided to this office.*

Agreed. An application to NJDEP is currently pending.

4. *The project site is traversed by an unnamed tributary to the Raritan River which appears to have a drainage area of approximately 170 acres at its crossing with Elizabeth Avenue. Current FIRM map does not delineate the limits of the Flood Plain and Flood Hazard Area (FHA); therefore, the Applicant should obtain a FHA determination from NJDEP to establish the limits of the FHA and determine if additional permits are required.*

Agreed. An application to NJDEP is currently pending.

5. *It appears the proposed development will disturb portions of wetlands and wetlands transition areas; therefore, a NJDEP Freshwater Wetlands permit must be obtained for the proposed disturbance. A copy of the permit must be provided to this office.*

Agreed. An application to NJDEP is currently pending.

6. *The Site Plan and Grading Plan should be revised to show and label the limits of the flood hazard area, riparian zone, DRCC buffers and wetlands transition areas.*

The enclosed Site Plan set sheets have been revised accordingly.

7. *The proposed outfall pipe from the detention basin, headwall and associated conduit outlet protection is located within the Riparian zone and potentially the Flood Hazard Area. The Applicant must obtain a FHA permit from NJDEP and a copy of the permit should be provided to this office.*

Agreed. An application to NJDEP is currently pending.

8. *The Applicant must obtain a Soil Erosion and Sediment Control Plan Certification from the Somerset-Union Soil Conservation District. A copy of the certification must be provided to this office.*

Agreed. An application to SUSCD is currently pending.

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9. *The proposed development proposes more than 1 acre of land disturbance and must obtain a General Permit for Construction Activities from the NJDEP. A copy of the permit must be provided to this office.*

Agreed. Once SUSCD plan certification is obtained, the applicant will apply for the General Permit for Construction Activities.

10. *Pre-development peak runoff for the onsite drainage area was computed using a runoff curve number of 72 for a HSG C soil with wood cover. In accordance with Table 2-2c of the TR-55 manual the runoff curve number should be 70. Revise drainage report accordingly.*

The hydrograph calculations in the Stormwater Management Report have been revised accordingly.

11. *The applicant's engineer should provide information to verify the limits of the offsite drainage area noted as 3.66 acres. It appears that the offsite area is about three times what is noted. Revised drainage plans and report accordingly.*

The offsite drainage area has been delineated utilizing aerial topography from the Pictometry website as well as field observations. Section 3 of the Stormwater Management Report includes the topography and delineation of the offsite drainage area.

12. *The proposed surface detention basin shall be offset a minimum of 10' from all property lines. Revise plans and report accordingly.*

As shown on sheet SP-03, the detention basins are located 10' or greater from property lines.

13. *It appears that the proposed detention basin meets the definition of a dam. The Applicant's engineer should verify that this basin meet the design requirements in the Dam Safety Rules N.J.A.C. 7:20. A signed and sealed certification by a New Jersey licensed Professional Engineer should be provided certifying that the proposed dams meet the technical requirements at N.J.A.C. 7:20.*

Due to the redesign of the project, all detentions basins were lowered and no longer exceed the threshold of the dam definition.

14. *Section C.5 of the drainage report states that "a groundwater recharge waiver may be sought from the applicable reviewing agency if suitable permeability rate cannot be found at ANY recharge BMP locations on the development sites". Please note that a waiver from strict compliance from the groundwater recharge can only be granted for public roadways, railroad and pedestrian walkway enlargements. Revise drainage report accordingly.*

A groundwater recharge spreadsheet has been added to the appendix section of the Stormwater Management Report. However, based on the test pits performed by Whitestone Associates, the area of the original detention basin had very low to no permeability (less than one inch per hour). Also, (based on the following comment #15) we will perform additional test pits to ensure that there is a feasible soil stratum to meet the groundwater requirement. We respectfully request that this item be a condition of approval. We will coordinate the field work before commencing and share the percolation testing results with the Board's Engineer.

15. *The stormwater management area evaluation conducted by Whitestone Associates consisted of three soil test pits within the footprint of the proposed detention basin. In addition, three (3) tube permeameter tests were performed within the horizon (silty clay loam) extending from 1' to 2.5' deep, resulting in a K0 permeability. It is recommended that additional testing be conducted within the footprint of the proposed underground basins and within the area between Elizabeth Avenue and the proposed building. In addition, permeability tests should be conducted within the horizons identified as fractured bedrock (2.5' to 10' deep).*

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We respectfully request that this item be a condition of approval as additional field testing is required.

16. *In accordance with BMP Manual requirements, the hydraulic design of the outlet structure and outlet pipe must consider any significant tailwater effect from downstream waterways. Revise detention basin routing calculations to account for the tailwater in the receiving stream.*

The 100-year storm basin routings in the Stormwater Management Report have been revised to include the tailwater elevation based on the 100-year floodplain delineated thru the calculation method (to be reviewed by DRCC and NJDEP). These elevations are also labeled on Sheet SP-05 in the area of the two proposed outfalls.

17. *The storage volume provided by the foundation stone for the underground detention basins (SC-310 and MC-3500) cannot be used in the routing calculations because the storage volume will not empty between storms. Revise routing calculations accordingly.*

All routing calculations have been revised to include a "Starting Water Surface Elevation" at the top of stone/chamber invert. This ensures that the routings do not depend on the stone volume beneath the chambers for storage.

18. *The underground detention basins must be installed at a minimum slope of 0.1% toward the above ground detention basin to ensure that the underground basins will empty after every storm event. Revise plans and report accordingly.*

Sheet SP-05 has been revised accordingly.

19. *Storm drainage pipes must be installed at a slope that produces a flow velocity of 2 fps when the pipe is flowing full. This includes pipes that interconnect the different sections of the underground basins. Revise drainage report and plans accordingly.*

The Stormwater Management Report and Sheet SP-05 have been revised accordingly.

20. *Proposed underground basins accounts for the storage volume in the stone; therefore, in accordance with BMP manual requirements all runoff to the underground basin must be pretreated to remove at least 50% of the TSS from the runoff volume. The underground basins are not in accordance and should be revised accordingly.*

As shown on Sheet SP-05, Water Quality devices have been provided for pavement runoff entering the underground basins.

21. *The construction details for the stormtech chambers SC-310 and MC-3500 included on sheet 19 should be revised to show the correct dimensions and elevations. The elevations should be consistent with information provided in the drainage report, grading plan and drainage plan.*

The Stormwater Management Report, Grading Plan, Drainage Plan, and Construction Details have been revised for consistency.

22. *The Nonstructural Strategies Point Systems (NSPS) analysis provided in the drainage report includes 3.0 acres of proposed unconnected impervious surface in Step 3A of the form. It appears that all proposed impervious surface in this development is directly connected. Revise analysis accordingly.*

The redesign of this project incorporates nonstructural strategies such that a portion of the northerly driveway and roof runoff discharges directly to the existing wooded areas. As shown on the revised NSPS spreadsheet in the Stormwater Management Report, the required number of points has been exceeded.

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23. *The Nonstructural Strategies Point Systems (NSPS) analysis provided in the drainage report includes 1,285 lf of vegetated runoff conveyance system in Step 3D of the form. The Applicant's engineer should clarify the location of the vegetated conveyance system or the analysis should be revised accordingly.*

The vegetated runoff conveyance includes the proposed swales located along the southerly property line and the paths from the proposed curb cuts to the swales and detention basins.

24. *The Nonstructural Strategies Point Systems (NSPS) analysis provided in the drainage report concludes that the development in question provided an 85% point ratio while 91% is required. Applicant's engineer should further address this issue.*

As shown on the revised NSPS spreadsheet in the Stormwater Management Report, the required number of points has been exceeded.

25. *The drainage report should be revised to include an Annual Groundwater Recharge Analysis to determine the groundwater recharge deficit due to the proposed development. Revise report accordingly.*

The Annual Groundwater Recharge Analysis spreadsheet has been provided in the Stormwater Management Report.

26. *The plans should be revised to include a construction detail of proposed Outlet Structure OS#3.*

Outlet Structure details are shown on Sheet SP-20.

27. *The drainage report should be revised to include routing calculations to size the emergency spillway for the proposed above ground detention basin. The location of the emergency spillway should be shown on the grading plan and drainage plan, noting the length and invert.*

Since the proposed detention basins do not meet the definition of a dam, the principal overflow outlet is the top grate of the outlet structure which is set at least 6 inches below the top of berm.

28. *The plans should be revised to include a cross section of the proposed above ground detention basin. The cross section should include bottom of basin, low flow channel, minimum slopes at the bottom of the basin and minimum side slopes of the berm, minimum width and elevation of proposed top berm, water surface elevation for the water quality, 2-yr, 10-yr, 100-yr and emergency spillways storm events, invert of spillway, freeboard provided and seasonal high groundwater table.*

Basin cross section details are found on Sheet SP-18.

29. *In accordance with stormwater management regulations, trash racks must be installed at the intake at the outlet structure. Construction details of the trash racks must be provided to demonstrate compliance with N.J.A.C. 7:8-5.7(a)2 and 6.2(a).*

Trash rack details have been provided on Sheet SP-20.

30. *In accordance with BMP Manual requirements, extended detention basins must fully empty within 72 hours. The drainage report should be revised to include calculations to demonstrate compliance with this requirement for the aboveground and underground detention basins.*

The Water Quality Storm routing calculations have been revised to include a stage-discharge table to show up to 80 hours to demonstrate that the basins empty with 72 hours. The routing calculations for the 2-, 10-, and 100-Year Storm events demonstrate that the basin empties less than 72 hours through a hydrograph chart.

31. *The cross sections for the underground detention basins SC 310 and MC 3500 should be revised to*

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show the correct elevations for the bottom of stone, invert and top of chambers, top of stone, minimum and maximum elevation of proposed finish grade, water surface elevation for the water quality, 2-yr, 10-yr, 100-yr storm events, and seasonal high groundwater table. Revise details accordingly.

The cross section details for the StormTech chambers have been revised accordingly as shown on Sheet SP-19.

32. *The drainage report should be revised to include information to confirm that the water surface in the stream will not adversely impact the manufactured treatment device (BaySaver Barracuda). The construction detail provided on sheet 19 should be revised to note the water surface elevation in the stream for the 100-yr storm event.*

As shown on the SP-05 Sheet, Water Quality Structure #3 located at the westerly end of the project could potentially be impacted by downstream flooding. However, the 100-year floodplain in this area is elevation 73.00. The invert of the pipe at this structure is elevation 70.83 and there is a baffle wall/internal weir within this structure (to prevent resuspension of solids) above the top of pipe at approximately elevation 72.83.

33. *In accordance with BMP Manual requirements, for underground extended detention basins, pretreatment is a design requirement. The drainage report should be revised to document compliance with this requirement.*

As shown on Sheet SP-05, Water Quality devices have been provided for pavement runoff entering the underground basins.

34. *The Applicant's engineer should verify the need for foundation cutoff walls of relatively impervious material under the berm of the detention basin. If an impervious core is needed, a cross section of the proposed berms should be provided showing the installation of the cutoff wall and the grading plan should be revised to show the extent of the clay core material. The proposed clay core should conform to the requirements of the Standard Township Detail. Revise plans accordingly.*

The project redesign has minimized the basin berm heights. After review of the Township detail, the clay core would not be applicable to Basin #2 (westerly basin) as this basin is proposed to be excavated which is that it does not raise the water elevation above existing grade. Basin #1 does raise the water elevation but the berm elevation of 75 is only 2.5' above existing grade. The intent of the clay core is for more substantial berms and should not apply to the proposed basins.

35. *The Applicant's engineer should review the need for anti-seep collars to control seepage along pipes extending through basin embankments. Design calculations for the number of collars, spacing and size of the anti-seep collars should be included in the drainage report and construction details of the collars should be provided.*

As with the clay core response above, the basins do not warrant anti-seep collars either. Basin #2 is an excavation with no berm above existing grade and Basin #1 has a small 2.5' high berm.

36. *All inlets and pipes receiving runoff from offsite tributary areas should be designed to convey the 100-yr storm event. Pipe calculations for the conveyance system on the south side of the proposed building should be revised accordingly.*

The pipe calculations have been revised accordingly.

37. *Typical cross sections, profiles and capacity calculations for all proposed swales should be provided. Revise drainage report and plans accordingly.*

38. *The minimum acceptable pipe size for stormwater conveyance is 15 inches. Revise plans and*

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calculations accordingly.

The Drainage Plan and Stormwater Management Report has been revised accordingly.

39. *The drainage report should be revised to include pipe capacity calculations for the pipe reaches from DMH#104 to HW#100 and from OS#3 to HW#1.*

Pipe Calculations have been revised accordingly.

40. *Pipe runs from A Inlet #206A to DMH# 206 and A Inlet #207A to DMH# 207 are noted as back pitched. The applicant should review further.*

Due to the project redesign, this comment is no longer applicable.

41. *It appears DMH#206 and DMH#207 have the 12" inverts mislabeled as out in lieu of in.*

Due to the project redesign, this comment is no longer applicable.

42. *The note for the Water Quality Structure #1 should be revised to indicate the invert in and out is 30" pipe.*

Due to the project redesign, this comment is no longer applicable.

43. *There appears to be insufficient pipe cover over the 30" HDPE near OS#3.*

Due to the project redesign, this comment is no longer applicable.

44. *An executed Major Development Stormwater Summary (Attachment D of the Tier A MS4 NJPDES Permit) shall be submitted to this office for review and approval.*

Please see attached for the completed form accordingly.

45. *Provide a Stormwater Maintenance Agreement for the stormwater system to insure future maintenance. A sample agreement is available from the Engineering Department.*

We respectfully request that this item be a condition of approval.

46. *The Operations and Maintenance Manual (OMM) should be revised as follows:*

- a. *The OMM should be revised to include a brief overview of each proposed BMP identifying the purpose of the BMP (to address water quality, quantity, etc.) and its function.*
- b. *An inspection checklist and the corresponding preventative and corrective maintenance actions to be taken for the most common problems in a detention basin (aboveground and underground) such as standing water after the design drain time, excessive sediment on basin bed, uneven bed, sinkholes, standing water in the outlet structure longer than 72 hours, etc.*
- c. *The OMM should be revised to include basic design information for the proposed detention basins such as design detention time, design drain time, elevation of the seasonal high water table/bedrock, elevation of the bottom of the basin, the TSS removal rate achieved by the basin and a summary of the rainfall depth, runoff volume, peak outflow rate, and water surface elevation for each storm event (water quality, 2-yr, 10-yr, 100- yr and emergency spillway). The OMM should also include the size, type (orifice, weir, spillway, etc.) and invert elevation for each outflow device provided.*
- d. *An inspection checklist and the corresponding preventative and corrective maintenance actions to be taken for the most common detention basin problems such as the observed detention time is longer than the design detention time, standing water in the basin after design drain time, erosion on pond side, standing water in the outlet structure longer than 72 hours, etc.*

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The Operation and Maintenance Manual has been revised accordingly.

H. MISCELLANEOUS

1. *Revise/Add the following details based on Franklin Township standard details:*
 - a. *Add the following note on all of the detail sheets, "In case of discrepancy, Township Standard Details shaft hold";*
 - b. *Add a Type B inlet access driveway back plate detail;*
 - c. *Replace the Typical Hydrant & Valve Installation detail with the latest Township Standard Detail (should clearly so the valve opens right);*
 - d. *Add a typical retaining wall detail;*
 - e. *Provide a trash enclosure detail, which should delineate type of enclosure, size, type and size of gate and finish for slab;*
 - f. *Revise the 'Accessible Parking Striping Layout' detail for consistency with the site plan. It appears the minimum length proposed is 18'. In addition, the Accessible Parking Signage layout should be delineated on the site plan;*
 - g. *Add the Township Utility Pipe Bedding detail;*
 - h. *Add the Township Preservation Area Markers detail;*
 - i. *Add the Township Fire Department Connection detail, if required by the Fire Prevention Director;*
 - j. *Add the Township Embankment and Detention Basin Clay Core detail;*
 - k. *Replace the 'Drainage Manhole Frame and Cover' detail with the Township Standard detail;*
 - l. *Revise the size of the Stop Sign detail to 30" x 30" in compliance with the MUTCD;*
 - m. *Revise the Curb Ramps for the Physically Handicapped detail to provide a minimum landing area of 4';*
 - n. *Revise the Concrete Sidewalk detail to note that a maximum cross slope of 2% is permitted;*
 - o. *Add a heavy duty pavement detail, 2" HMA Surface Course, 6" HMA Base Course and 4" DGA Subbase;*
 - p. *Add a construction detail for the Outlet Control Structure;*
 - q. *All sanitary sewer details shaft be submitted directly to the Franklin Township Sewerage Authority for review and approval — Comment Only*

The construction details have been incorporated onto the plans accordingly.

Thank you in advance for your attention to this matter and please contact me with any questions or concerns. My contact information is found below but you can also reach me via email at: mike@hammerengineering.com.

Sincerely,
Hammer Land Engineering



Michael A. Rodrigues, PE
Associate

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