

TECHNICAL REVIEW LETTER

Re: Spring Street Development Corp.
703 & R 703-727 Spring Street
Application No. Z-05-19
City of Elizabeth, NJ

File No: Z-05-19

By: Jose M. Betances, PE, PP, MCE

Date: September 6, 2019
Revised October 9, 2019
Revised May 21, 2020

Based on the review of the site plans entitled “Preliminary and Final Site Plan, 703-727 Spring Street Capping Plan & 729-763 Meadow Street Access Road, 703-727 Spring Street & 729-763 Meadow Street City of Elizabeth, Union county, State of New Jersey, Block 8. Lots 1299.A & 1699.D”, prepared by Jarmel Kizel Architects and Engineers Inc., dated 2/21/19, last revised 2/28/20”, Sheets C-001, C-101, C-200, C-300, C-301, C-403, C-600, C-700C-800, C-801, & C-900; the site plans entitled “Spring Street Development Corp., 703-727 Spring Street, City of Elizabeth, Union County, N.J., Prepared for The Elm Group, Inc., Block 8, Lot 1699.D, prepared by Frey Engineering, LLC, last revised 2/28/20”, Sheets C-100, C-400, C-401 & C-402; and the Site and Stormwater Management Analysis, Prepared For:, The ELM Group, Inc., Prepared By: Frey Engineering, LLC”, dated 8/4/17, last revised 2/28/20, the following comments should be addressed:

1. Section II.b. - Preliminary Site Investigation of the Stormwater Management report, refers to a topographic survey provided by Barry Isett and Associates, dated June 2015 that has not been submitted. Copy of the survey should be provided. **Not Addressed.**
Partially Addressed. A topography survey has not been provided, only a boundary survey. The boundary & topography survey should be provided.
2. Section II.f. - Preliminary Site Investigation of the Stormwater Management report indicates that the current revisions are based upon a compilation of revisions from the SSDC Consultants, dated 11/30/18. However, these revisions have not been submitted. The compilation of revisions should be provided. **Addressed. The response letter of 3/4/20 from Jarmel Kizel indicates that their response letter shall serve as the summary of all revisions made to the drawings submitted with their correspondence.**

3. A boundary and topographic survey reflecting the current site conditions should be submitted. **Not addressed.**
Partially Addressed. A topography survey has not been provided as indicated above.
4. The inlets and manholes located along the south property line should include the storm sewer pipes. **Not addressed.**
Partially Addressed. Not all pipes have been shown on the plans and the boundary survey. The plans show inlets with inverts from pipes that have not been shown.
5. All storm sewer pipes, materials, sizes, inverts, lengths and slopes should be shown for both the existing and proposed storm sewer system, including the offsite drainage system. The grading & drainage plan, and the existing conditions plan should be revised accordingly. **Not addressed.**
Partially Addressed. Not all requested information has been provided.
6. Based on the information provided in the stormwater management report, runoff from most of the site is tributary to the drainage system on Woodruff Lane. The existing conditions plan, and the grading & drainage plan should be expanded to include Woodruff Lane and all relevant information. **Not addressed.**
Partially Addressed. Additional information should be provided for the existing manholes.
7. No information has been provided for the existing drainage system downstream of proposed discharge points. The offsite downstream drainage systems should be added to the existing conditions and grading & drainage plans. All existing and proposed underground utilities and drainage system on Spring Street, Woodruff Lane and on site should be clearly shown on plans. **Not addressed.**
Partially Addressed. Additional information should be provided. All inverts, pipes dimensions, etc. should be provided.
8. The drainage report incorrectly combines the peak runoff rates for the different discharge points. In order to demonstrate compliance with the stormwater quantity control requirements at N.J.A.C 7:8-5, the applicant must demonstrate that the requirements are met separately for each discharge point. The calculations should be revised accordingly. **Not adequately addresses. Applicant should comply with the required runoff rate reductions at N.J.A.C. 7:8.**
9. The required peak flow reductions should be based on the allowable peak flows from the predevelopment calculations. Table 5 and the calculations should be revised accordingly. **Not addressed.**
10. The storm drainage calculations for the 2, 10, 25 and 100-year storms should be based on the rainfall amounts of 3.39, 5.17, 6.42 and 8.69 as per the latest New Jersey 24 hours rainfall frequency data from NRCS. The calculations should be revised accordingly.
Addressed.
11. The existing site coverage conditions Table should be added to the stormwater management report. Only the proposed site coverage conditions (table 4) has been provided.

Addressed.

12. Spot elevations should be added within the existing barrier located near the north property line to verify drainage areas OS-2 and E-4. **Addressed.**
13. The conditions of the existing PVC drainage pipes are unknown. The 'n' value used for the existing pipe listing shown on page 5 of the Hydro CAD report should be 0.013. **Not addressed.**
Partially Addressed. The 'n' value of 0.011 used for the 18" RCP from node MH-A4 should be changed to 0.013. The pipe listing on Sheet C-400 and drainage report should be revised.
14. A Manning's roughness coefficient 'n' of 0.012 should be used for all proposed HDPE pipes. The stormwater calculations should be revised accordingly. **Partially addressed. The use of 0.013 is acceptable, however 0.010 has also been utilized. The calculation should be revise accordingly.**
Addressed.
15. The Hydro CAD diagrams for the existing and proposed pipe listing should be added to the stormwater management report. **Partially Addressed. Some of the symbols of the routing diagrams shown on the drainage plans are too small to read. The Hydro Cad routing diagrams for existing and proposed conditions without the site plan background should be added to the drainage report to facilitate the review.**
16. The drainage calculations should be revised to include a diagram or plan showing the tributary drainage areas to each pond. The ponds should also be included. All existing and proposed routing diagrams should be added to the stormwater management report. **Addressed.**
17. Additional spot elevations and contours should be provided offsite around the site to properly evaluate the existing and proposed discharge points of analysis. **Addressed.**
18. The minimum time of concentration used in the hydrograph calculations should be 10 minutes. **Addressed.**
19. All water quality peak flows calculations are 0.00 cfs. The NJDEP cumulative and incremental rainfall distribution for the water quality storm should be used. The water quality rainfall distribution should be added to the report. **Addressed.**
20. The required TSS removal rate should be included in the drainage calculations. **Not addressed. Continuing Comment.**
21. Existing and proposed land cover drainage area maps should be added to the stormwater management report. The maps should clearly delineate the impervious and pervious areas. **Not addressed. Continuing Comment. The drainage plans are not clearly delineated. The drainage plans show only the total drainage areas. The pervious, impervious and gravel areas should be added to each drainage area.**

22. The drainage area OS-4 shown on the drainage report doesn't match with the drainage area on the pre-drainage area map. The drainage calculations and drainage plan should be revised accordingly. **Not addressed.**
23. Based on the information shown on the existing conditions plan, it appears that portion of existing drainage area O-3 is tributary to drainage area E-6. Additional spot elevations should be added in order to verify the drainage areas limits. **Addressed.**
24. Clarify why the existing storm sewer pipes and structures have been used as detention basins in the hydrologic calculations. **Additional clarification is required.**
Addressed.
25. The peak flows for the 25-year storm conduits calculations should be provided using the Rational Method. In addition, a report should be added in DOT format (inv., elev., depth of flow, HGL, EGL, design velocity, cover, etc.) by using hydrograph software or equivalent. The report should also include the pipe profiles with the EGL & HGL shown. **Not addressed.**
26. The inlet drainage plan should be added to the drainage report. **Not addressed.**
Continuing Comment. A separate inlet drainage plan for the drainage areas tributary the inlets only, excluding a drainage area that is not tributary to an inlet, should be prepared as part of the calculations requested under Item #25 above.
27. The pre-development and post-development drainage areas plans should clearly delineate the drainage areas and each point of discharge. **Partially addressed. Additional clarification is needed with respect to delineation of drainage areas.**
Continuing Comment. the drainage area delineations should be clarified with thicker color lines.
28. The information used for the outlet devices of Ponds 1S, 2S., 3S, 4S and 5S, I4 on the drainage report have not been shown on the plans. It is not clear how this information was obtained. The plans and report should be revised accordingly. **Not addressed.**
Continuing Comment. The drainage areas are unclear and some of drainage areas names on the drainage plans don't match with the area on the drainage report. For example, Drainage area OS-1 on the drainage plan is calculated as drainage area OS-2. The drainage calculations will need to be review it once all drainage areas in the report and drainage plans are revised.
29. The information of the outlet devices of Pond I1 and I5 on the drainage report don't match with the existing conditions plan. The plans and drainage report should be revised for consistency. **Not addressed. See response at Item #28 above.**
30. Existing inlet I-2 shows a portion of a 6" PVC inflow pipe. Additional information is required concerning the 6" PVC and possible additional tributary drainage area. **Addressed.**
31. Clarify if the secondary devices shown on the Summary Ponds for the existing conditions calculations are in accordance with the existing inlets grates on the property. **Not adequately addressed.**

Continuing comment. The inverts provided on the drainage report for existing Pond COMM-2 don't match with the plans. Verified that all inverts in the drainage report are coordinated with the plans.

32. The hydrologic calculations have been performed using smaller sub-catchment areas that are tributary to the same point of analysis (i.e. existing drainage areas E-1 thru E-7 are tributary to the existing drainage system living the property at the southwest corner of the site. To facilitate the review, a section should be added to the drainage report describing each drainage area in detail, including the land cover and discharge point of analysis. **Continuing comment. This response is relative to Comment 47.**
Continuing comment.
33. The ladder rung detail for the sanitary and storm structures should be provided. **Addressed.**
34. Details should be provided for all proposed monument and wall mounted signs. **Addressed. Applicant states that no signage is proposed.**
35. The location of proposed trash/enclosure should be added to the plans. **The Applicant states that no trash enclosure is proposed.**
36. A note should be added to the plans indicating that all improvements are to be made in compliance with 2010 ADA Standards, etc al. **Addressed.**
37. Provide a note on the plans indicating that all traffic signage and striping shall be in accordance with the latest edition of MUTCD. **Addressed.**
38. The line of sight distances shall be depicted on the site plans in accordance with the current edition of AASHTO's policy on geometric design of highways and streets. **Not addressed. Partially Addressed. The sight distances are not clear. Dimensions should be added.**
39. The applicant should provide a truck & vehicle turning circulation exhibits to verify that the on-site circulation is adequate for the required service and emergency vehicles access throughout the site. **Not addressed. Partially Addressed. The truck specifications should be added to the plans E-002. The turning template for the vehicles that will provide services has not been provided.**
40. The location of no parking zones for firefighting operations should be provided, including the construction details. **Not addressed. Partially Addressed. No parking fire zone signs locations and details should also be provided in accordance with the fire department requirements.**
41. The limits of proposed pavement restoration, curbs and restriping along public roads should be shown on the plans. **Addressed.**
42. Approval should be obtained from the Fire Official regarding the required fire lanes, markings, signage, striping and access for fire apparatus. **Not addressed.**

43. Calculations should be submitted to demonstrate that the existing waterline is suitable for the proposed domestic and fire flow volumes and pressures. **Not Addressed.**
44. Provide domestic and fire flow water distribution system calculations. A minimum of 20 psi of residual pressure should be available for firefighting. Hydrants flow testing results should be submitted to confirm available fire flow (AFF). **Not addressed.**
45. Sanitary sewer and water demand calculations should be provided for the proposed project. **Addressed. Calculations have been provided on Sheet C-300.**
46. Concrete encasement should be provided for all utility crossings of less than 18". The location of all proposed utility crossings and concrete encasements should be shown on the plans and profiles. The applicant should provide a table format for water mains/utility crossings, including lateral crossings, with corresponding clearances to reflect the avoidance of conflicts with other underground utilities. **Addressed.**
47. The utility crossing detail should be added to the plans. A note should also be included indicating that water mains crossing storm sewers or drains where the clearance between the pipes is less than eighteen inches (18"), pier supports for the storm sewer shall be provided in order to prevent the load transfer to the affected utility. Partially addressed. **The note needs to be added. Addressed.**
48. A note should be added to the plans indicating that all constructions shall comply with the current rules and regulations or ordinances of the City of Elizabeth, NJDEP and all applicable regulatory agencies having jurisdiction. **Addressed.**
49. A note should be added to the plans indicating that any existing curbs or other objects damaged during construction shall be repaired or replaced to the satisfaction of the City Engineer and NJDOT if required. **Addressed.**
50. The utility pole to remain shown on Sheet C-300 located along the edge of the driveway, near the no parking loading zone striping, should be relocated to the south of the striping space. **The Applicant has indicated that the striping has been added but it does appear to have been added to the plans.**
51. Additional dimensions should be added on Sheet C-300 for handicap parking spaces, accessible aisles, striping spaces, loading ramp, the two-way and one-way driveways and curb cuts on Spring Street and curb radii. **Partially addressed. Additional dimensions should be added.**
52. Spot elevations should be added to all proposed handicap parking spaces, ramps and landing areas to verify conformance with ADA requirements. **Not addressed. Partially Addressed. It is unclear if this requirement has been met. Additional spot elevations should be provided within each ADA accessible route and building doors.**
53. In order to facilitate the review of the proposed grading, the grading plan should include slopes with arrows within the overall area. **Not addressed.**

Partially Addressed. Additional arrows and spot elevations should be provided within the overall area and along the property lines in order to verify the drainage paths.

54. Less than 1% slope has been proposed within a portion of the proposed parking area. The grading should be revised to provide paved area with a minimum of 1.5% to avoid ponding.

Not addressed.

Partially Addressed. It appears that there will be ponding in some areas.

55. Are new fences and gates proposed? **Addressed.**

56. Clarify if new water and gas lines will be required. **Addressed.**

57. The location of existing gas meters, water meters and vaults should be shown on the plans. **Not addressed.**

Partially Addressed. The applicant engineer indicated that there is no gas service to the site. However, there is a gas line running along the ally and near the south rear corner of the building. Clarify the existing utilities.

58. The demolition plan C-200 indicates that the existing electric supply area will be modified, while C-300 indicates to remain. The plans should be revised to include the proposed modifications. **Addressed.**

59. No directional signages have been provided. All proposed signs, striping and pavement markings should be provided, including but not limited to stop signs, stop bars, one-way, ingress & egress, no parking, do not enter, fire lane, handicap, etc. The construction details should also be provided. **Partially addressed. Additional signs and pavement markings should be added to plans. Continuing Comment. Details of all proposed signages should be provided. In addition, the proposed signs should be labeled on the site plan.**

60. The existing contours on Sheet C-400 should be shown on halftone dashed line. **Addressed.**

61. In order to properly review the grading plan, the proposed site conditions should be shown on the Grading and Drainage plan sheet C-3. **Addressed. An updated drawing C-400 has been provided.**

62. Verify that the proposed lighting plan complies with the requirements of the City of Elizabeth. The illumination requirements from the City of Elizabeth should be added to the plan. **Not addressed.**

Continuing Comment. The City of Elizabeth lighting requirements have not been provided on the lighting plan.

63. The drainage report should be revised to provide emergency spillway calculations for the proposed subsurface detention systems. The emergency spillway analysis should be based on the 100-year basin inflow runoff and assuming that the principal spillway is malfunctioning and will not allow any discharge or flow. **Not addressed.**

Partially Addressed. The drainage calculations will need to be review it once all drainage areas in the report and drainage plans are revised.

64. The Stormwater Operations and Maintenance Manual (O&M) should be prepared and submitted for review in accordance with the New Jersey BMP Manual. These documents would be required to be attached to the deed as a rider. **Not addressed.**
Continuing Comment.
65. The cold in place recycle pavement section detail on Sheet C-4 should be revised to include the thickness of the base course. **Addressed.**
66. The subbase course of the standard full depth asphalt pavement section detail on Sheet C-4 should be 6". **Addressed.**
67. The proposed manhole cover detail should include the year. **Addressed.**
68. Additional details should be provided for the proposed Retain it detention basin and outlet control structure. **Not addressed.**
Continuing Comment.
69. The proposed Retain it detention basin consists of structures with open bottom and 6" stone base. It appears that stormwater will be infiltrated. Soil test in accordance with NJDEP BMP manual should be submitted. Partially addressed. **A detail of the membrane should be provided. Continuing Comment. Detail of the proposed 30 mil impermeable liners and PVC liners should be provided. In addition, The bottom of the system should be located one foot minimum above the seasonal high water table. The soil test results shall be submitted.**
70. Due to the potential for groundwater contamination, the use of infiltration basins is prohibited in areas of high pollutant or sediment loading is anticipated. Clarification is required concerning the contaminated areas. **Addressed.**
71. The roof leader should be connected to the underground drainage system. The roof leader collection system and cleanouts should be shown on the grading and drainage plan. The cleanout riser cover detail should also be added to the plans. **Partially addressed. Only the storm cleanout detail was provided. Continuing Comment.**
72. The applicant submitted two separate sets of site plans for the project. many of the information and details that are repeated on both sets of plans are different, i.e. existing topography, Soil Erosion Control Plan, construction details, proposed grading, missing information, etc. The site plans should be combined into one single set of plans. Only the drainage plans should be separated and included in the Stormwater Management Report. **Partially addressed. The plans still show duplicate details. Continuing Comment. Two different asphalt payment details are shown on Sheets C-401 and C-900.**
73. The Applicant shall comply with the comments of the City Engineer, dated May 13, 2019, October 1, 2019 and March 18, 2020. **Not addressed.**

74. Additional comments may be presented pending receipt of the revised plans and reports. Please submit 3 copies of revised plans and reports along with a point by point response Letter. The response letter shall address all comments and should include the location of the revised items.

Additional Comments per Submittal of March 9, 2020

1. Details of the proposed 24” wide and 12” wide trench drains should be provided. The details should indicate how the trench drains discharge to the Geopave area.
2. The underground drains for Geopave area 2PGP2 on Sheet C-400 are crossing the concrete loading dock walls. Details should be provided for the proposed crossing. The top and bottom elevations should also be added.
3. The grading within the proposed 12” wide trench drains on Sheet C-400 should be clarified. Based on the proposed elevations it is unclear how the stormwater runoff in this area will be collected. It appears that the low point is located at 5PGPN.
4. The proposed finished floor elevations and all high & low points should be provided. Also, additional spot elevations should be added at each building corner and property lines.
5. Clarification is required for the various labels with the word “HOLD” shown on Sheet C-400.
6. The runoff flow arrow near system 2PGP3 and the concrete encasement shows that stormwater runoff will flow toward the south east area. Clarify how the collection points for this drainage area.
7. Due to the potential for groundwater contamination, the applicant is proposed a 30 mil impermeable liners and PVC liners at the bottom of the proposed pervious paver system with underdrain which should be designed in accordance with chapter 9.7 of the BMP Manual. However, based on the BMP Manual, this type of system should be designed with filter fabric and not impermeable liners. Clarification is required and the design engineer should evaluate an alternate design for water quality provisions.
8. The inverts of the outlet pipes shown on the Retain-it system component table on Sheet C-402 are located below the bottom of the Retain-it system. In addition, some of the orifice/weir elevations are located at the same elevation of the system bottom. The plans and drainage calculations should be revised. Also, spot elevations should be added within each retain-it system and at each corner.
9. The required minimum cover for the proposed Retain-it structures should be provided.
10. Based on the proposed spot elevations shown on Sheet C-900 for the handicap parking located near the existing building, it appears that there will be ponding within the handicap spaces. The grading plan should be evaluated.

11. The existing storm profile on Sheet C-401 should include the length and slope of all pipes.
12. The proposed storm profile has a low point at station 4+85. Clarify how the stormwater will be collected.
13. The geopave systems located along the proposed storm profile should be added to the profile.
14. The proposed concrete encasements should be shown on the proposed storm profile.
15. Dimensions and side slopes should be added to the proposed infiltration basin section detail on Sheet C-403.
16. An emergency spill way should be added to the proposed infiltration basin on Sheet C-403 in accordance with the BMP Manual. The construction detail should also be provided.
17. Based on the proposed grading on Sheet C-403, stormwater runoff from the south portion of the proposed driveway on Lot 1299.A will sheet flow to Lot 1309, Block 8. However, the drainage calculations assume that the entire east section of site will be collected and infiltrated in the proposed infiltration basin. The grading plan and report should be revised
18. Profile and cross sections of the proposed driveway on Lot 1299A should be provided. The proposed infiltration basin should be shown on the cross sections.
19. The Stormwater Operations and Maintenance Manual (O&M) for Lot 1299.A should be prepared and submitted for review in accordance with the New Jersey BMP Manual. These documents would be required to be attached to the deed as a rider.

20. Drainage Report for Lot 1299A, Block 8:

- a. Time of concentration (T_c) of 10 minute has been assumed. The drainage report should include a calculated T_c .
- b. Per the hydrology calculations, to verify that the a 3.3x T_c duration produces the critical basin volume, please provide the duration analysis.
- c. The runoff coefficients for the drainage calculations should be in accordance with NJAC 5:21 Table 7.1
- d. The drainage report should address the potential for groundwater contamination.
- e. The proposed runoff reductions don't comply with the requirements at N.J.A.C. 7:8.
- f. A groundwater mounding analysis should be submitted for the proposed infiltration basin in order to evaluate the hydraulic impacts on the groundwater table.
- g. Soil test for the proposed infiltration basin should be submitted in accordance with NJDEP BMP manual.

- h. The hydraflow IDF curve report should be added to the drainage calculations. The rainfall intensity curves for Rational Method should be based on Figure 5-4 of the BMP Manual or local rainfall frequency data from NOAA.
 - i. The required TSS removal rate calculations and drain time in accordance with the BMP Manual should be included in the drainage report.
 - j. The water quality calculations should be added to the drainage report.
 - k. The drainage area for hydrograph 4 doesn't match with the area on the drainage plan. Calculations should be provided for all drainage areas shown on the drainage plans.
 - l. The infiltration basin must be designed to safely convey overflows to downstream drainage systems. The design of any overflow structure must be sufficient to provide safe, stable discharge of stormwater in the event of an overflow in accordance with the BMP Manual. The drainage report should be revised to provide emergency spillway calculations.
 - m. Section IV.c "Site Surface Water Management" indicates that a 15" RCP connects from an A-Inlet on Lot 1699.D to the stormwater line in the alley, while the plans show 18" pipe. The report and plans should be revised for consistency.
21. A Copy of the sewer video that was conducted on the property should be submitted.
 22. The invert out of the upstream LID for the existing 6" pipe along the south property line is located at elevation 10.42 while the downstream invert is at elevation 13.89 or 3.42 feet higher. The boundary survey and plans should be reviewed.
 23. The existing storm manhole along the south property line near the existing building on Lot 1699.C shows an invert out for a 4" pipe, while the downstream LID has an invert in from a 6" pipe. The pipe size and type should be clarified.
 24. The location of the existing 4" pipe that discharge into the existing inlet located near the south west corner of the existing building on Lot 1699.C shown be shown on the survey and plans.
 25. Topography information should be added to the boundary survey.
 26. Note #6 indicated that the original survey is signed in blue ink. However, the signed and sealed boundary survey was submitted with black ink. The note should be revised, or the original survey signed with blue ink and sealed should be submitted.
 27. Note 1 on Sheet C-100 indicates that the existing conditions is based upon a survey provided by Barry Isett & Assoc. Inc, dated 6/5/15, latest revisions 1/28/20. However, Sheet C-100 shows additional information not shown on the boundary survey. The boundary survey should be revised to include all the additional information on the civil plans related to the existing conditions.

28. The information for the existing inlet located near the north corner of the existing building in Lot 1699.D should be provided in the boundary survey and plans.
29. The inverts of the existing sanitary sewer system should be added to the survey and plans.
30. Additional comments may be presented pending receipt of the revised plans and reports. Please submit 3 copies of revised plans and reports along with a point by point response Letter. The response letter shall address all comments and should include the location of the revised items.