Dear Chairperson Lugo and Planning Board Members:

Our office has reviewed the referenced documents for an application for a Preliminary & Final Major Subdivision and Preliminary & Final Site Plan Approval for the construction of a mixed-use commercial development campus. The Developer’s Engineer Langan Engineering has submitted a formal letter stating that all the items contained within the original November 16, 2021 Harbo Consultants, Inc. (HCI) review letter will be addressed by the applicant prior to Developer seeking building permits. This “Response to Comments from Harbor Consultants” letter is dated November 24, 2021 and addressed to the Planning Board Chairwomen Georgette Gonzalez Lugo. This Response Letter is an acknowledgement that all conditions stated in the City’s Review Letters shall be addressed by the Applicant. Based on this acknowledgement in writing, and additional correspondence with the Applicant this office is comfortable with the Planning Board rendering a decision on this Application for Preliminary and Final Site Plan along with the conditions stated within this letter.

A. Appendix

1. Technical Review Comments from Harbor Consultants
2. Traffic Review from Dolan & Dean
B. **Documents Reviewed and Completeness Review**

The following materials were received and reviewed:

1. Preliminary and Final Site Plan and Subdivision Approval for Parcel G, prepared by Langan, dated October 8, 2021, consisting of twenty-three (23) sheets.
3. Lot Consolidation Plan, prepared by Langan, dated August 24, 2021, consisting of one (1) sheet.
7. Architectural Floor Plans and Elevations, prepared by Cornerstone Architects Ltd., dated October 8, 2021, consisting of eight (8) sheets.
C. Tax and Aerial Maps

Figure 1 – Tax Map of Block 1, Lots 1380.G1-1380.G5 and 1380.G7-1380.G9

Figure 2 – Aerial Map of Block 1, Lots 1380.G1-1380.G5 and 1380.G7-1380.G9
Table 1: Tern Landing Redevelopment Plan Area Properties  
City of Elizabeth, Union County, New Jersey

<table>
<thead>
<tr>
<th>Owner</th>
<th>Street Address</th>
<th>Block and Lot</th>
<th>Lot Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMR FUNDING, LLC</td>
<td>REAR 575 KAPKOWSKI RD</td>
<td>Block 1, Lot 1380.G1</td>
<td>3.20 AC</td>
</tr>
<tr>
<td>BMR FUNDING, LLC</td>
<td>REAR 577 KAPKOWSKI RD</td>
<td>Block 1, Lot 1380.G2</td>
<td>3.00 AC</td>
</tr>
<tr>
<td>MFC HOLDCO, LLC % EEA PORTFOLIO</td>
<td>REAR 627 KAPKOWSKI RD</td>
<td>Block 1, Lot 1380.G3</td>
<td>3.02 AC</td>
</tr>
<tr>
<td>EMPIRE TFI C/O TAX LIEN MANAGER LLC</td>
<td>REAR 655 KAPKOWSKI RD</td>
<td>Block 1, Lot 1380.G4</td>
<td>3.89 AC</td>
</tr>
<tr>
<td>EMPIRE TFI C/O TAX LIEN MANAGER, LLC</td>
<td>REAR 667 KAPKOWSKI RD</td>
<td>Block 1, Lot 1380.G5</td>
<td>4.35 AC</td>
</tr>
<tr>
<td>OSPREY INVESTMENTS, LLC</td>
<td>REAR 631 KAPKOWSKI RD</td>
<td>Block 1, Lot 1380.G7</td>
<td>3.57 AC</td>
</tr>
<tr>
<td>EMPIRE TFI C/O TAX LIEN MANAGER LLC</td>
<td>REAR 601 KAPKOWSKI RD</td>
<td>Block 1, Lot 1380.G8</td>
<td>4.13 AC</td>
</tr>
<tr>
<td>CITY OF ELIZABETH</td>
<td>REAR 583 KAPKOWSKI RD</td>
<td>Block 1, Lot 1380.G9</td>
<td>3.00 AC</td>
</tr>
</tbody>
</table>

**Total Area of the Tern Landing Redevelopment Area**  
28.16 +/- Acres

*Information Shown in Table is per Municipal Tax Information Only

D. **Redevelopment History**

There is a long history of redevelopment in this area of Elizabeth. The original Kapkowski Road Redevelopment plan was prepared by Louis Berger & Associates and approved by the City of Elizabeth Planning Board in December 1991\(^1\).

On December 6, 2020, the City Council authorized\(^2\) the Planning Board to re-examine the Kapkowski Road Redevelopment Plan. A redevelopment plan was prepared and endorsed by the Planning Board on April 15, 2021. Subsequently the City Council adopted the amendment to the redevelopment plan. This project review report has been prepared in accordance with the April 12, 2021, Tern Landing Redevelopment Plan.

E. **Project Description**

The Tern Landing Redevelopment Plan Area is located in Ward 1 of the City of Elizabeth along the Newark Bay waterfront. The study is comprised of eight (8) contiguous parcels of land consisting of 1,226,386 square feet (+/- 28.15 acres). All parcels located in the redevelopment area are currently vacant. The redevelopment area is located along Jersey Gardens Boulevard West and neighbors the Jersey Gardens Mall on Block 1, Lot 1380.F. Lot 940 borders the redevelopment area to the south and is owned and operated by Pennsylvania Lines.

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1 City of Elizabeth Ordinance Number 2479
2 City Council Resolution No. 39902
F. Project Proposal

The applicant is proposing to construct four (4) warehouse buildings with office space for a total of approximately 277,440 square feet of habitable space. The campus will be accessed by three (3) curb cuts on Jersey Gardens Boulevard. Buildings 1 and 3 will front on Jersey Gardens Boulevard and buildings 2 and 4 will be located behind them, along the Newark Bay waterfront. Each building is proposed to have an office component and the remaining warehousing space is proposed to be flex space.

There are seventy (70) parking spaces along Jersey Gardens Boulevard in front of buildings 1 and 3 and 13 parking spaces on the side of building 3. An additional one-hundred and ninety-two (192) parking spaces are proposed behind buildings 2 and 4 along the waterfront for a total of two-hundred and seventy-five (275) spaces. Twelve (12) of the rear parking spaces are reserved for waterfront access.

<table>
<thead>
<tr>
<th>Building</th>
<th>Office Space</th>
<th>Warehouse Space</th>
<th>Other</th>
<th>Total Bldg Footprint</th>
<th>Loading Docks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4,473</td>
<td>72,057</td>
<td>270</td>
<td>76,800</td>
<td>16</td>
</tr>
<tr>
<td>2</td>
<td>5,500</td>
<td>52,740</td>
<td>-</td>
<td>58,240</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>5,996</td>
<td>74,804</td>
<td>-</td>
<td>80,800</td>
<td>16</td>
</tr>
<tr>
<td>4</td>
<td>5,500</td>
<td>56,100</td>
<td></td>
<td>61,600</td>
<td>13</td>
</tr>
<tr>
<td>Total Campus</td>
<td>21,469</td>
<td>255,701</td>
<td>270</td>
<td>277,440</td>
<td>57</td>
</tr>
</tbody>
</table>

G. Planning & Zoning Review

The property is located in the Tern Landing Redevelopment Plan Area which is an amendment to the larger Kapkowski Road Redevelopment Plan Area. Flexible commercial space in a small-business campus with more than one principal building including warehousing, offices, and commercial uses are all principal permitted uses. Up to 400,000 square feet of space and 285 parking spaces are permitted. Section 3.1.A below pertains to the Principal Permitted Uses in the Redevelopment Plan:

A. Permitted Principal Uses

1. Flexible Commercial Space.
   a. Small-business campus with more than one principal building.
   b. Major retail/commercial uses
   c. Warehousing
   d. Offices
   e. Light Manufacturing/Assembly Stand-alone
   g. Restaurant or eateries
   h. Ferry service and all accompanied improvements

Section 3.1.A.B deals with Accessory Uses in the Redevelopment area. It is the intent of the plan to provide both passive and active open space including the following:
1. Surface Parking;
2. Loading Docks;
3. Signage;
4. Gardens, hardscape patio areas, landscape features;
5. Green building techniques and green roofs;
6. Solar canopy array or roof mounted systems;
7. Stormwater management/flood storage systems;
8. Generators;
9. 5G Towers;
10. Waterfront Access;
11. Outdoor storage as an ancillary use limited to 30% of Outdoor Truck Court Area, not including truck parking;
12. Fueling station (including but not limited to diesel, gas and hydrogen) limited to 2,000 gallons;
13. Wash-down facility for vehicles (not open to the public); and
14. Restaurants or eateries within a structure primarily utilized for another purpose

The below bulk standards shall be applied on a tract-wide basis. Should a subdivision occur, all subdivided parcels shall front on a public or private road and shall be subject to planning board approval.

i. **Bulk Schedule**

<table>
<thead>
<tr>
<th>Description</th>
<th>Required</th>
<th>Proposed</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min. Lot Area</td>
<td>3 acres</td>
<td>28 acres</td>
<td>Conforming</td>
</tr>
<tr>
<td>Min. Lot Width</td>
<td>500 ft</td>
<td>1,615 ft</td>
<td>Conforming</td>
</tr>
<tr>
<td>Min. Front Yard Setback (Jersey Gardens Blvd)</td>
<td>10 ft</td>
<td>58 ft</td>
<td>Conforming</td>
</tr>
<tr>
<td>Min. Front Yard Setback (Internal Roadway)</td>
<td>20 ft</td>
<td>60 feet</td>
<td>Conforming</td>
</tr>
<tr>
<td>Min. Side Yard Setback</td>
<td>10 ft</td>
<td>80 ft</td>
<td>Conforming</td>
</tr>
<tr>
<td>Min. Rear Yard Setback</td>
<td>10 ft</td>
<td>134 ft</td>
<td>Conforming</td>
</tr>
<tr>
<td>Max. Principal Building Height (1)</td>
<td>50 ft (2)</td>
<td>38.8 ft</td>
<td>Conforming</td>
</tr>
<tr>
<td>Max. Accessory Building Height</td>
<td>2 stories/25 feet</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Max. Building Coverage</td>
<td>80%</td>
<td>23%</td>
<td>Conforming</td>
</tr>
<tr>
<td>Max. FAR</td>
<td>0.60</td>
<td>0.23</td>
<td>Conforming</td>
</tr>
<tr>
<td>Max. Impervious Coverage</td>
<td>85%</td>
<td>62%</td>
<td>Conforming</td>
</tr>
</tbody>
</table>

* Pre-existing Non-conformity
(V) Variance Requested

(1) Building height shall be measured from the average finished ground level elevation, excluding basements and subgrade parking. Parapet walls may project not more than three feet.
(2) An additional 10% of principal building height shall be permitted for accessory uses and utilities.
ii. Subdivision

Section 3.1.C of the Redevelopment Plan addresses the potential subdivision of the property. The bulk standards in Table 3 may not apply to individual lots as detailed in the Redevelopment Plan — “Provided a phasing plan is approved… the bulk requirements set forth in [the bulk table] may not apply to individual lots to be subdivided….the bulk standards shall apply to the Tern Landing Plan Area as a whole, provided that all easements as described in this plan are incorporated and maintained starting with the first phase of the development.

No phasing plan has been provided as part of this application. The applicant shall discuss the development phasing and subdivision, and that all utilities, stormwater facilities, walkways, sidewalks, roadways, interior roadway networks and driveways, easements and all other on and off-site infrastructure be constructed in the first phase of development.

iii. Signage

No signage package has been submitted with this application in accordance with the redevelopment plan. Refer to Section 3.1.D of the Redevelopment Plan for signage requirements. Each building is allowed to have one mounted façade sign per each side of the building. One Monument style sign is permitted at the entrance of the campus. Additionally, wayfinding signs are permitted at each intersection of the central internal roadway.

iv. Parking

Section 3.2.A addresses the parking requirements in the redevelopment area. The proposed parking configuration generally conforms to the redevelopment plan. A total of 275 spaces are proposed inclusive of twelve (12) waterfront parking spaces reserved for visitors to the Newark Bay Waterfront, as is contemplated in the redevelopment plan and in DEP requirements. One (1) electric car charging station per building is required, but not shown on the site plan.

<table>
<thead>
<tr>
<th>Standard</th>
<th>Required</th>
<th>Proposed</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min. Warehousing Spaces</td>
<td>255,701 SF/2000 = 127.8 spaces</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1 space/ 2,000 GFA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min. Office Spaces</td>
<td>21,469 SF = 64.4 spaces</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3 spaces/ 1,000 GFA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Required Parking Spaces</td>
<td>192.2 spaces</td>
<td>275 spaces</td>
<td>Conforming</td>
</tr>
<tr>
<td>Waterfront Access Parking Spaces</td>
<td>-</td>
<td>12 spaces</td>
<td>Conforming</td>
</tr>
<tr>
<td>Electric Car Charging Station</td>
<td>4 total, 1 per building</td>
<td>Unknown</td>
<td>Unknown</td>
</tr>
<tr>
<td>Min. Parking Stall Dimensions</td>
<td>8.5 x 18</td>
<td>9 x 18</td>
<td>Conforming</td>
</tr>
<tr>
<td>Min. Parking setbacks from principal buildings</td>
<td>3 feet</td>
<td>10.5 feet</td>
<td>Conforming</td>
</tr>
<tr>
<td>Loading Dimensions</td>
<td>10 x 60</td>
<td>60 feet</td>
<td>Conforming</td>
</tr>
</tbody>
</table>
H. **Varniances and Waivers**

No variances are requested as part of this application pending the receipt of a signage plan.

I. **Planning Comments**

1. The site plan and architectural plans do not match. The site plan shows the typical office space being located in the corners of each building whereas the architectural plans do not show office space at all.

2. Will there be separate entrances for different uses? Currently the architectural plans show one entrance for both uses.

3. Applicant shall confirm that the horizontal dimension of the loading docks is at least 10 feet each. **This item has been addressed, complied.**

4. The site plan shall be revised to show the location of the four (4) required electric car charging stations.

5. Applicant shall submit a signage package.

6. Waterfront Access: a 10-foot-wide walkway providing access to the Newark Bay Waterfront is proposed in accordance with the redevelopment plan and DEP requirements for waterfront development.

7. The developer shall apply to the City for Title 39 Jurisdiction over the property. **This item has been addressed, complied.**

8. If any environmental hazards exist, the developer is responsible for obtaining all necessary permits and approvals from the New Jersey DEP, Land Use Regulation and a Licensed Site Remediation Professional ("LSRP"), including a Response Action Outcome ("RAO") if applicable.

9. DEP Landfill Closure Application. The site is listed on the New Jersey Department of Environmental Protection Agency Landfill List. The operating status of the site is listed as "Not Open" and has not been properly closed. As part of this application, the entire site will be capped. The landfill closure shall be done in accordance with all applicable New Jersey DEP requirements.

10. The developer shall provide a Remedial Action Work Plan ("RAW") prior to issuance of CO.

11. The proposed access easements shall remain a condition of approval.

12. NJDEP has determined that the Great Ditch stormwater drainage culvert under the existing Jersey Gardens Mall now requires a Riparian (easement) zone. The design engineer shall supply an easement from the edge of this pipe to the proposed structures as part of this application. Based on estimates from the City’s professionals, an easement of fifteen 15’ is required from the edge of the pipe to each of the proposed buildings. The design engineer
has informed the City’s professionals of such and is incorporating this into their design. This easement shall remain a condition of approval.

13. The developer is acquiring an assortment of parcels from different landowners and title owners as part of this application. Since these parcels that are being acquired have a large assortment of easements and land restrictions our office is requesting that the revisions to subdivision map (lot consolidation) be performed via a file plat and not via deeds. The ownership of the existing parcels along with their respective easements is difficult to decipher via deeds and a filed plat would make transfer of title simpler for professionals involved in such transfers.

14. Langan’s engineers have designed this project to meet DEP’s latest stormwater requirements for sites with over one-acre of disturbance. Harbor Consultants, Inc. staff will provide a detailed review later within this review letter. I am requesting that the design engineer Mr. Daniel Miola, PE with Langan Engineering supply short testimony as how the existing stormwater design will function. The Stormwater Management Report states that this project will utilize “Filterra HC Peak Diversion” units. These units are placed throughout the development via a detail which is not labeled on the grading and utility plan. This office requests a brief summary on how this system operates and how will this project enhance the water quality of runoff from this project which discharges into the Great Ditch, which eventually flows into the Arthur Kill. These Filterra units must be labeled on the grading & utility plans.

15. Site Circulation. Site circulation of pedestrians, car and truck traffic were a key component to the layout which was finally selected. The site was designed to have a throughfare for pedestrians and car traffic which will be separate from the truck traffic. A central boulevard was designed for both the pedestrian and employees to walk, drive and park free of most of the truck circulation. The radius and tight design of this Bouvard will not permit large over the roadway trucks to circulate and mix with pedestrian/commuters. The trucks will have access to the four (4) proposed buildings from the outside perimeter (south and north) driveways of the site. These driveways are design to handle the large WB-67 trucks which are anticipated to be accessing these mixed-use warehouses. These trucks will have ample room to navigate the internal driveways and thus connect to the perimeter roadway of the Jersey Gardens Mall.

16. A pedestrian/commuter Boulevard will connect to the perimeter roadway of the Jersey Gardens Mall so that visitors will have safe access to the site, separate from delivery trucks. Not shown on the plans but approved by the Developer will be a pedestrian sidewalk on one side of the Boulevard from the Mall roadway to the waterfront. This walkway will then wind around the site in a northern direction. This sidewalk will then link up with the Jersey Gardens Mall pedestrian walkway at the northwest corner of the site. This pedestrian walkway will give employees of the mall, and this proposed Business Center the ability to walk, ride and stroll almost ½ mile of pathways to the waterfront, along the waterfront and back to Jersey Gardens.

17. A requirement of DEP’s Waterfront Development Permit program is the construction of vehicle parking, public access, and a public amenity along the Waterfront of the Newark Bay. The developer will be installing and maintaining lunch tables along the waterfront for utilization by the general public. This amenity has been linked via the pedestrian walkway
to all four (4) proposed Business Center buildings and the Jersey Gardens Mall. This lunch area will be open to all employees, visitors, shoppers, and the general public.

J. Regulatory Agency Approvals

The Applicant is required to obtain the following regulatory approvals prior to the issuance of building permits for this project:

1. Union County Planning Board;
2. Somerset – Union Soil Conservation District Certification;
3. NJ Department of Transportation (highway access and road opening permit);
4. NJ DEP Site Remediation Act;
5. NJDEP Treatment Works Approval (TWA)
6. NJDEP Water Allocation Permit
7. Any other regulatory agency having jurisdiction over or which require an approval or permit to be obtained by the Applicant.

It is the Applicant’s responsibility to secure all required permits and approvals.

It is our recommendation that should the Planning Board grant an approval to this application, that the Planning Board can grant Preliminary Site Plan Approval but a “Conditional” Final Site Plan. This is the same recommendation for the Preliminary & Final Subdivision Approval. It is our recommendation that the Applicant address all of the review comments in all of the referenced project review reports by all consultants, City departments, and regulatory agencies (NJDOT) prior to resubmitting an application for any construction permits. Any action taken on this application by the Planning Board is made subject to the Applicant submitting revised plans and documents satisfying the review comments within this report, and any testimony before the Planning Board by the Applicant and the Applicant’s professionals.

Please contact our office should you have any questions or comments.

Very Truly Yours,

Harbor Consultants, Inc.

Victor E. Vinegra, PE, PP, PLS

cc: Monae Whitehead, Board Secretary
    Patrick McNamara, Planning Board Attorney
    Joshua J. Koodray, Applicant’s Attorney
Appendix 1 - Technical Notes

a. General Comments

1. There are various notes in the plans that refer to a progress Alta/NSPS Title Survey. The final Alta Survey shall be submitted.

2. Trash enclosures have not been provided. The location of trash enclosures and construction details should be added to the plans. Trash shall be handled internal to the building, this item has been complied with.

3. 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.

4. Clarify if any monument sign or wall mounted signs are proposed and provide the construction details.

5. The site is located within the FHA and Coastal Zone. Approval from NJDEP shall be submitted. Copies of all plans and reports that were filed with NJDEP shall also be submitted.

6. The location of the FHA line, riparian zone, mean high water line (MHWL) and the required MHWL offset shall be shown on the plans.

7. The proposed 30’ wide public access easement should include the 10’ walkway located near the north access driveway.

8. The location of parking spaces and signages for the proposed public access area should be provided.

b. Traffic and Circulation

1. The Applicant shall provide the line-of-sight distances for combination truck at all driveways exits in accordance with the current edition of AASHTO's policy on geometric design of highways and streets.

2. The stop bar for the proposed center driveway has been placed at the edge of the existing curb. The stop bar should be relocated back to a point where the vehicle is required to stop.

3. The proposed center driveway’s concrete curb on Jersey Gardens Boulevard is located beyond the existing curb. The proposed curb should be aligned with the existing curb.

4. The Applicant shall provide traffic marking arrows that depict the direction of traffic flow along all proposed driveways on the site. Details of all proposed pavement markings and striping should be provided.

5. The site plan CS101 shall include the curb opening dimensions on Jersey Gardens Boulevard for all proposed driveways.
6. Profiles and cross sections of the proposed driveways should be provided in order to review the proposed geometric design elements.

7. The location of no parking zones for firefighting equipment should be provided. Construction details for the proposed no parking zoned and signages should also be added to the plans. In addition, approval should be obtained from the Fire Official in regard to the adequacy of proposed fire hydrants, fire lanes, markings, signage, striping and access for fire apparatus.

8. A note should be added to the plans indicating that all improvements are to be made in compliance with 2010 ADA Standards, etc. al.

9. Dimensions to the proposed handicap parking spaces and access aisles should be added on Sheet CS101.

c. **Grading/Utilities**

1. The limits of proposed pavement restoration, curbs and restriping along public roads should be shown on the plans. The pavement restoration shall be in accordance with the pavement restoration detail from the City of Elizabeth. The detail shall be added to the plans.

2. The grading plan should include directional arrows with the proposed slopes within the overall grading areas in order to facilitate the review.

3. Additional spot elevations should be added in the grading plan Sheet CG101 to all handicap ramps and landing areas in accordance with ADA requirements. The limit of the ramps and landing areas should be shown. Also, spot elevations should be added at every building corner, doors, stairs, loading areas, etc.

4. The slope within various grassed areas exceeds 3:1. The grading plan shall be revised accordingly.

5. The proposed contours 17 and 18 should not cross the top of the depressed curbs of the driveways on Jersey Gardens Boulevard. Also, the proposed contours are crossing the concrete curb island of the center driveway and other concrete curbs. The grading plan should be revised.

6. Additional topography and spot elevations should be added in order to review the proposed elevations for the bottom of the retaining wall.

7. Additional elevation labels should be provided for the existing and proposed contours.

8. Various building doors are located within the proposed bioretention basins. The grading within these areas should be revised. Also, clarify is safety fences will be installed within the bioretention basins.

9. The proposed FFE of 25.00 doesn't agree with many proposed elevations within the parking lot. Clarify how the building will be accessed from the parking areas.
10. Calculations should be provided for the proposed force mains and lift stations. In addition, construction details should be added to the plans.

11. The invert out of the proposed pump station located downstream of sanitary MH-101 should be added on Sheet CU101.

12. Clarify the location of the proposed force main between building #1 and the property line.

13. The location of all proposed storm and utility crossings should be marked on the utility plans Sheets CU101 and CU102. The Applicant shall provide a table format for all utility crossings with corresponding elevations in order to verify that there are no underground utility conflicts.

14. Concrete encasement should be provided for water main, sanitary sewer and storm sewer crossings of less than 18". The location of proposed concrete encasements should be shown on the utility plans and profiles. The concrete encasement detail shall be provided.

15. An engineer report for the sanitary discharge and domestic/fire water demand calculations should be provided.

16. A NJDEP Treatment Works Approval is required for this project. Copy of the approval should be submitted when obtained.

17. Applicant is proposing to tie the new 2" force main and other utilities into the existing underground utilities on Kapkowski Road. All existing utilities along Jersey Gardens Boulevard and Kapkowski Road should be clearly shown on the plans for the areas where the new utilities will be installed, including all elevations and inverts if applicable.

18. Provide domestic and fire flow water distribution system calculations. A minimum of 20 psi of residual pressure should be available for firefighting. Hydrant flow testing results should be submitted to confirm available fire flow (AFF).

19. Profiles should be provided for the offsite utility plan. The existing utilities should be included in the profiles, where applicable.

20. The location of concrete pads for electrical transformers should be provided, including the concrete pad details.

21. The plans and specifications supplied by the design engineer, Langan, has not finalized some of the important utilities but has agreed to supply this information to the City of Elizabeth as part of a “Conditional Approval” if the Planning Board so sees fit. One aspect of this is the design of the potable and fire flow water. The design engineer must provide the city with a potable/fire flow water design which includes a complete analysis of the proposed system. This is typically performed via a “Hardy-Cross” analysis of the water pressures residual and static of the system. The system must be linked and looped with proper protections. This system must meet the requirements of the Fire Department and Construction Fire Subcode Office prior to being approved.
Future meetings with the Fire Subcode Official can be arranged by the City of Elizabeth Construction Department.

22. In discussions with the City’s Fire Sub Code Official, the proposed design of a single fire pump system for all four buildings sprinkler systems from Building #1 may not be acceptable. Further discussions are required to discuss a single location for a fire booster system. It is the opinion of this office that a design meeting is needed to discuss this design with the City Fire Department and the City Subcode Official. The Subcode Official has suggested that a separate fire booster structure may be needed located in a common area so that if a fire were to occur in one of the four proposed warehouses that the fire department and facilities owner/management team could regulate the controls of the pressure boosting system from a safe and secure location. The final design of this system can only be initiated utilizing the “Hardy-Cross” computer model which will show the residual hydrant flows and pressures. Our office finds the existing design acceptable pending further discussions and meetings with the design professionals and the City of Elizabeth Fire Department and Subcode official.

23. The proposed water distribution design utilizes a separate potable water line from the fire-flow, this design is an excellent proposal. This design is a better long-term design when it comes to overall maintenance and longevity of the system. The proposed design is more costly for the developer, but it creates an enhanced system. Our office has also reviewed the hydrant locations per the “Site Utility Plan”. The spacing of the proposed hydrants is no greater than 500’ apart which equals at a minimum a radius of 200’ on fire hydrant locations. The design engineer has designed this system so that at no time on-site fire hydrants are further then a 200’ radius. This conforms to NFPA guidelines but the ultimate determination for this spacing comes from the City of Elizabeth Fire Department. Our office will be in discussions with the City Fire Department to confirm all hydrant locations.

24. The type and size of all fire hydrants, siamese twins and fire-fighting apparatus must be approved by the City of Elizabeth Fire Department. This is so that there is conformity within the city for keyways, locks, hardware, etc.

25. A modular retaining wall is being proposed along the southern property line. This modular wall will be directly behind the guard rail proposed for this location. Per discussions with the design professionals, the City is asking that a structural report be submitted to the City depicting the capacities of this wall. This wall will be twelve feet high in places and will have to retain the weight of larger WB-64 truck wheel loads. This office is concerned that the placement of utilities such as the stormwater sewer systems proposed alongside and directly on top of the tiebacks required for these modular walls is a cause of concern. This office would like to see a structural design more in the keeping of a gravity wall system which is not so reliant on as many fabric tie backs. This item can be addressed in the future prior to building permits being issued.

26. The retaining wall detail supplied on Sheet CS501 is a general detail. This detail has notes stating- “1. This detail is conceptual. The contractor shall submit detailed site-specific drawings, engineering calculations, and stability calculation to the engineer of record and agencies having jurisdiction for review and approval prior to construction. 2. Shop drawings and calculations shall be signed and sealed by a professional engineer. 3. Fence is to be provide whenever exposed height of wall is equal to or greater than 30
The applicant shall be responsible for this, not the general contractor. The proposed wall, which at times is close to twelve feet tall, must be reviewed and approved by the City Planning Board professionals prior to issuance of building permits.

27. The on-site asphalt detail seems somewhat light for a site which will be covering a closed landfill. In discussions with the City Engineer the city is seeking a minimum of 2” wearing course, 4” binder course over 6” stone. All the roadways in this complex will have City of Elizabeth emergency vehicles accessing the proposed campus.

d. Drainage

1. The applicant is proposing ten above ground small-scale bioretention basins with underdrains for water quality control only. However, a typical section detail is shown on Sheet LP501 with only one underdrain pipe and without any additional information. The proposed underdrain systems should be shown to each of bioretention basins on the drainage plan Sheet CG102, including the elevations and construction details to show how the underdrains will connect into the outlet structures.

2. Calculations shall be submitted to demonstrate how the 2-yr, 10-yr and 100-yr storms will be bypassed from the bioretention basins.

3. The time of concentration line on CW101 should be clarify. The information and location of sheet flow, shallow concentrated flow and channel flow should be indicated.

4. The water quality rainfall distribution should be based on one minute interval as per Table 5-2 and Fig. 5-10 of the BMP manual. Appendix A of the stormwater management report should be revised accordingly.

5. The hydraflow rainfall distribution used in the calculations should be added to the stormwater management report.

6. The proposed elliptical pipes used in the conduit calculations and profiles should be labeled on the drainage plan Sheet CG102.

7. Manning’s n value of 0.012 has been used in the conduit calculations for the elliptical concrete pipes. The calculations should be revised to use a Manning’s n value for concrete.

8. The design velocities hydraulic grade lines should be added to the storm sewer tabulation. The rip-rap calculations should be based on the design velocities. Also, clarify the velocities shown on the calculations.

9. The hydrographs report for the 25-yr storm used in the conduit calculations should be included in the report. Only the hydrograph summary reports have been included.

10. The roof leader collection system for each section of the building roofs should include the cleanouts, rim elevations, inverts and pipes information. The proposed 10” HDPE roof drains shall be included in the conduit calculations.
11. One foot minimum clearance is required between the bottom of the gravel layer of the bioretention's underdrain systems and the SHWT. The elevation of the SHWT shall be investigated and shown on the bioretention details.

12. The proposed drainage system will discharge into the existing great ditch. Additional information should be provided as to the conditions of the grate ditch. Construction details shall be provided for the proposed connections.

13. Section 4.2.2 of the stormwater maintenance plan indicates that the bioretention basins have been designed to drain in less than 72 hours for the 100-yr storm event.

14. The stormwater management maintenance plan should be expanded to include the name, address, telephone, etc., of all governmental agencies reviewing this project, including but not limited to NJDEP, soil conservation, Union County, Harbor Consultants, Inc. as City of Elizabeth Municipal Planner and Board Engineer, etc. The following sections and languages should also be included:

   a. **Evaluation And Revision**: “This manual has been prepared in accordance with the NJDEP Stormwater Best Management Practice Manual dated April 2004, last updated March 2021, and with the City of Elizabeth Chapter 13.24, revised in February 2021. The plan presented in this manual shall comply with the revised Code of the City of Elizabeth Section 13.24.100, and shall be evaluated for effectiveness at least once annually and revised as necessary. The municipality has the right of access for inspection and maintenance.

   b. **Safety And Response to Emergencies**

   For action to an emergency condition contact:
   Name:__________________
   Address;___________________
   Tel: ______________________
   Fax: _________________________
   Email:_____________________

   Corrective response to emergency conditions
   A major emergency that is likely to occur at this installation is the blockage of stormwater pipes, inlets or outlets by debris. Should this situation occur, the materials must be removed immediately. The inspection and preventative maintenance schedule should be periodically re-evaluated to assess any necessary changes to avoid re-occurrence of the blockage.

   Safety of inspection and maintenance personnel
   Maintenance and inspection of the stormwater facilities is not expected to pose unusual danger to personnel. However, maintenance personnel are expected to dress in appropriate protective clothing and use the appropriate equipment and safety gear in accordance with OSHA regulations and procedures.

   c. **Log Maintenance, Deed Filing & Yearly Plan Filing Requirements**
Person or Entity Responsible for Preventive and Corrective Maintenance (Aka Responsible Party):

Name: _______________________________
Address: _______________________________
Phone Number: ________________________________

The responsible party shall maintain a detailed log of all preventive and corrective maintenance for the structural stormwater management measures incorporated into the design of the development, including a record of all inspections and copies of all maintenance-related work orders as required by §13.24.100.B.7.

The responsible party shall ensure that the maintenance plan described herein, and any future revisions thereto required by §13.24.100 be recorded upon the deed of record for Block ____________, Lots ____________ as required by §13.24.100. B.

The responsible party shall evaluate the effectiveness of the maintenance plan at least once per year and adjust the plan and the deed as needed; and retain and make available, upon request by any public entity with administrative, health, environmental, or safety authority over the site, the maintenance plan and the documentation required by §13.24.100.B.6 and §13.24.100.B.7.

The responsible party shall permit the municipality the right of access for inspection measures, and for maintenance if required under §13.24.100.B.9 and §13.24.100.D.

Should the ownership of the stormwater facilities change, the responsible party noted herein shall update the maintenance plan to include all the updated owner information. The responsible party shall then hand deliver or forward the plan via registered mail to the City of Elizabeth within 90 days of the change of ownership/responsible party.

15. The stormwater management maintenance plan should include a detailed cost estimate for inspections and maintenance tasks

e. Details

1. The Applicant shall provide a concrete pad construction detail for the proposed transformers. Also, dimensions should be added to all concrete pads on the site plans.

2. The Applicant shall provide the construction details of the backflow preventer and hotbox enclosure for the proposed domestic and fire water supply. All proposed water connection details should be added to the plans.

3. Applicant is proposing only one offsite heated enclosure within the intersection of Jersey Gardens Boulevard for the domestic and fire water supply of the proposed four buildings. An easement will be required for the location of the proposed heated
enclosure. In addition, the Applicant shall verify with the utility company that additional hot boxes will not be required. Copy of the verification document shall be submitted.

4. The manhole frame and cover detail should include the word storm, sanitary or combined sewer as appropriate, and the year. Manhole frame and cover located within the city right-of-way should include the word “City of Elizabeth”. The ladder rung detail should also be added.

5. The proposed 6” concrete curb detail on Sheet CS501 should be revised to be 7” wide on top and 9” at bottom in accordance with the City standard detail.

6. Construction details of the proposed Filterra water quality units should be added to the plans. Also, provide details to show how each offline and peak diversion units will connect to the proposed drainage system.

7. All proposed dimensions should be added to the outlet control structures details on Sheet CS503.

8. The NJDOT curb ramp type details applicable to the proposed development should be added to the plans. Also, ADA detectable warning surfaces should be provided at every curb ramp throughout the site. Detail of the detectable warning surfaces should also be added to the plans.

9. Construction details of the proposed concrete sidewalk steps and handrails should be added to the civil plans.

10. Construction detail for the proposed loading areas should be provided.

11. The embankment section details for the proposed bioretention basins should be provided. In addition, the size and location of the berms and emergency spillways should be shown on the plans and details.

12. The steel post guiderail proposed on top of the retaining wall is not rated to prevent a vehicle from driving through it, the design is only to deflect a vehicle from a side impact. The city has required that projects which propose taller retaining walls such as the ones for this site supply a structural guardrail which can withstand impact and keep the vehicles from falling over the retaining walls. The city requested said for the site next door along North Avenue and would like to request the same for this site. Normally these guardrails are a timber system with steel backing which is designed to accept the impact, deflect the vehicle and keep the vehicle from driving through and over the wall. The design engineer should look into selecting a guardrail system which has a higher structural rating. Our office has a listing of reinforced timber guardrails which have this capability.