APPENDIX L

New Jersey Department of Environmental Protection Green Infrastructure Hardship Exception Memorandum and Coastal Resource Coordination

L.1 NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION GREEN INFRASTRUCTURE HARDSHIP EXCEPTION MEMORANDUM

L.2 PERVIOUS PAVEMENT PLAN AT SIGNATURE EAST

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APPENDIX L.1

New Jersey Department of Environmental Protection Green Infrastructure Hardship Exception Memorandum

Memorandum

To: Stephen Olivera, Damien Friebel, NJDEP

From: Keith Cahill, P.E. Bryan Ehnes, P.E. Bohler
Dan Miola, P.E. Lou Mastriani, P.E. Langan

Date: January 12, 2026

Re: **NJDEP Green Infrastructure Hardship Exception Memo**
Signature Flight South and East Expansion Projects
Signature Leasehold Areas at Teterboro Airport
Boroughs of Moonachie and Teterboro
Bergen County, New Jesey

PURPOSE

The purpose of this memorandum is to provide additional support to the applicant's request for a NJDEP Green Infrastructure (GI) Hardship Exception pursuant to N.J.A.C. 7:13-15.1. As documented in the Flood Hazard Permit application and the separate Environmental Assessment (EA) prepared to comply with the National Environmental Policy Act, the expansion of ramp and hangar capacity at Teterboro Airport (TEB) is necessary to safely and effectively manage existing and anticipated future aircraft traffic at the airport. Because a Flood Hazard Permit is required for the project, NJDEP is the agency charged with implementing the storm water rules, N.J.A.C. 7:8 for the project. The detailed summary below documents the hardships for the proposed hangars and ramps (aprons) construction projects at Signature East and Signature South leasehold areas at Teterboro Airport. These hardships are a result of existing site conditions, requirements of the proposed development, and federal regulations and guidance from the Federal Aviation Administration (FAA). Both the Signature East and South projects were previously approved by the NJDEP Division of Land Resource Protection (DLRP) in 2017. Since those approvals, the previous designs have been updated to incorporate modifications that align the plans more closely with green infrastructure requirements that have been introduced since the permits expired. Overall compliance with NJDEP regulations has been achieved through alternate methods due to the constraints outlined in this memo.

Pursuant to N.J.A.C. 7:13-15.1 (b) and (c), and as documented in the EA, there is no feasible alternative to the project that would alleviate the concerns about public safety or otherwise fulfill the identified need for the increased ramp and hangar space. Moreover, as documented below, because the site is an active airport with an extremely high water table, it is not possible to fully comply with the GI requirements. The project has been designed to avoid offsite impacts, and will not pose a threat to the environment, public health, safety, or welfare.

It is important to note that both the proposed Signature South and East sites have been designed to comply with the current stormwater quality, quantity, and recharge design and performance standards (N.J.A.C. 7:8). However, due to site constraints and airside operational requirements within the airport leasehold areas, strict compliance with the green infrastructure requirements of N.J.A.C. 7:8-5.3 cannot be achieved. Specifically, the green infrastructure BMPs identified in Table 5-1 and Table 5-2 are not practicable for these projects.

Accordingly, the applicant proposes to satisfy the applicable performance standards through stormwater management measures identified in Table 5-3, including underground detention systems with upstream manufactured treatment devices. Therefore, this memorandum formally requests approval of a NJDEP Green Infrastructure Hardship Exception to allow the use of Table 5-3 measures and underground detention systems in lieu of the GI BMPs listed in Table 5-1 and Table 5-2. This request is necessary to demonstrate compliance with FAA regulations and guidance, and address constructability challenges within the respective airport leasehold areas (i.e., elevations of existing taxiways and runways, groundwater elevations, etc.). Granting this exception will ensure continued adherence to NJDEP stormwater management objectives while maintaining FAA standards.

GREEN INFRASTRUCTURE REQUIREMENTS

Pursuant to N.J.A.C. 7:8-5.2 for major developments, the minimum design and performance standards for groundwater recharge, stormwater runoff quality, and stormwater runoff quantity at N.J.A.C. 7:8-5.4, 5.5, and 5.6 shall be met by incorporating green infrastructure in accordance with N.J.A.C. 7:8- 5.3.[1]

N.J.A.C. 7:8-1.2 define green infrastructure (GI) as "a stormwater management measure that manages stormwater close to its source by:

1. Treating stormwater runoff through infiltration into subsoil;
2. Treating stormwater runoff through filtration by vegetation or soil; or
3. Storing stormwater runoff for reuse."

It emphasizes the treatment of stormwater close to its source through the implementation of small-scale Best Management Practices (BMPs) distributed throughout the site.

PROJECT IMPLEMENTATION

The proposed stormwater design incorporates green infrastructure BMPs to the best extent possible, given the site constraints and stringent regulatory requirements mentioned above. A more detailed description of the attempt to meet each determinant of the green infrastructure BMPS is further described below:

1. *Treating stormwater runoff through infiltration into subsoil.*

   Exempt—The project sites are located in tidal wetland areas in the Meadowlands, which are known to have high groundwater and low permeable soils. Thus, there is little to no infiltration in the existing condition. Therefore, no recharge/infiltration is required nor is any proposed based on the native subsurface characteristics. Supporting data is provided in the respective Engineering Reports for the East and South projects.

[1] Notably, when a municipality is the stormwater review agency, it may grant a variance from the Green Infrastructure requirements when it is "technically Impracticable" to meet them, if the applicant demonstrates the design achieves the "maximum possible" compliance. N.J.A.C. 7:8-4.6. This analysis documents both technical impracticability and maximum possible compliance. NJDEP should follow the same analysis through the flood hazard hardship process.

2. *Treating stormwater runoff through filtration by vegetation or soil.*

   Does Not Comply—The FAA recommends that storm water management systems located within 10,000 feet of a runway used by jet aircraft (such as TEB) be designed and operated so as not to create above-ground standing water. Stormwater detention ponds should be designed, engineered, constructed, and maintained for a maximum 48–hour detention period after the design storm and to remain completely dry between storms. To facilitate the control of hazardous wildlife, the FAA recommends the use of steepsided, rip-rap or concrete lined, narrow, linear-shaped water detention basins. FAA recommends against use of submergent or emergent aquatic vegetation as natural filters within 10,000 feet of a runway used by jet aircraft (such as TEB), as these may be used by some species of flocking birds, such as blackbirds and waterfowl, for breeding or roosting activities. This federal guidance therefore discourages the majority of green infrastructure BMP solutions that incorporate plantings and other above ground facilities within the leaseholds. Refer to the list of Green Infrastructure BMP Hardships below for additional supporting information.

   The proposed design incorporates stormwater filtration through proposed pervious pavement to the maximum extent possible in landside areas where plane loads are not anticipated. Refer to Item 2 in the list of Green Infrastructure BMP Hardships below for additional information.

3. *Storing stormwater runoff for reuse.*

   Not Suitable— No reuse of stormwater runoff is proposed due to an inability to meet the strict drawdown requirements associated with its implementation. The potential reuse activities are limited due to infrequent plane washing and low water usage associated with bathrooms and site irrigation and therefore would not provide enough demand to comply with the NJDEP's maximum 72-hour drawdown timeframe. Refer to the list of Green Infrastructure BMP Hardships below for additional information.

4. *Other Green Infrastructure Determinants*
   - BMPs distributed throughout the site—**Complies**
   - Drainage Limitations met—**Complies**

Proposed Stormwater Measures

- Quality
  - **Complies—meets required TSS removal**
    - Pervious Pavement GI
      - Located in car parking areas
      - Maximum Contributory area 3:1
    - Non-GI MTDs (80%)
      - Located in Ramp/ Apron areas

- Quantity
    - **Complies—meets required peak reductions**
        - Pervious Pavement GI
            - Maximum Contributory area 3:1
        - Underground Detention
            - Pretreatment Non-GI MTDs (80%)

- Recharge
    - **Pre-construction groundwater recharge volume is zero—D Type Soils due to existing wetlands comprising the majority of the Signature project site areas**
        - Previous geotechnical investigations reported high groundwater levels and mottling observed 1-2 feet below ground surface, indicating seasonal saturation and limited infiltration capacity. Supporting data is provided in the respective Engineering Reports for the East and South projects.

Summary of Green Infrastructure BMP Hardships

The following is a list of Green Infrastructure (GI) BMPs for Groundwater Recharge, Stormwater Runoff Quality, and/or Stormwater Runoff Quantity listed at N.J.A.C. 7:8-5.2. Each section will summarize why certain GI BMPs are not feasible for both East and South project locations.

1. Cistern

NJDEP's BMP Manual states cisterns are "not viable for sites with little or no demand for reuse" and "the demand for stormwater reuse on site must be sufficient to empty the cistern within 72 hours after a rain event" (NJDEP BMP Manual, Chapter 9.1). This is a critical compliance point because airport hangars have extremely low and inconsistent reuse demand.

While plane washing is suggested as a reuse option, it is inadequate because aircraft washing is infrequent and often scheduled only every few months for private jets and largely avoided during winter. The NJDEP also warns that "stormwater collected from certain types of rooftops, such as painted roofs, galvanized metal roofs, tar and gravel, sheet metal, asphalt seal-coated roofs, or from roof areas that contain mechanical or electrical equipment, may be contaminated with trace metals or other toxic compounds; therefore, consideration must be given to restricting this type of harvested rainwater to uses where the potential for human contact is not an issue" (NJDEP BMP Manual, Chapter 9.1). A metal hangar roof falls directly into this category. Furthermore, FAA Advisory Circular AC 43-4B cautions washing planes with untreated or contaminated water can "accelerate corrosion and damage sensitive aircraft components," emphasizing the risk posed to aircraft by using untreated stormwater.

Similarly, toilet flushing reuse in hangars is insufficient because hangars "are generally classified as low-occupancy facilities and typically require only minimal plumbing and sanitary facilities" (FAA, AC 150/5300-13B). With only a handful of employees and limited visitor traffic, daily water demand for toilets

is negligible, often less than 200 gallons per day, compared to the tens of thousands of gallons generated by even a small storm event. This difference means cisterns would remain full most of the time, failing to provide the required storage drawdown. Therefore, this reuse strategy is not achievable in a low-use hangar environment.

Additionally, site irrigation is also not a valid reuse option for airport hangars because airports are designed with "paved aprons, taxiways, and minimal landscaped areas" (FAA, AC 150/5300-13B), leaving little to no green space for irrigation. According to FAA Advisory Circular AC 150/5200-33C, "landscaping and vegetation near aircraft movement areas should be minimized because they can attract hazardous wildlife, increasing the risk of wildlife strikes and foreign object debris hazards." Even if small, landscaped areas exist, their irrigation demand would be negligible compared to the substantial runoff volumes generated by hangar roofs. This imbalance will cause the cistern to remain full most of the time, failing NJDEP's requirement that "the demand for stormwater reuse on site must be sufficient to empty the cistern within 72 hours after a rain event" (NJDEP BMP Manual, Chapter 9.1). Therefore, irrigation reuse does not align with airport design standards, safety requirements, or NJDEP's intent for effective stormwater management.

In conclusion, the low frequency of plane washing, minimal irrigation and restroom use, and inconsistent water demand make cistern reuse impractical for airport hangars. Additionally, cisterns also do not help with stormwater runoff quality or groundwater recharge; thus, these are not a feasible option to meet green infrastructure requirements.

2. Pervious Pavement

For both projects, implementation of green infrastructure best management practices is achieved through the use of pervious pavement systems designed within the car parking areas, vehicular access driveway, and taxiway clearance zones that are not subject to aircraft loading. However, pervious pavement is not suitable for ramp areas within the leaseholds due to structural, operational, and regulatory constraints.

FAA Advisory Circular 150/5320-6G provides FAA recommendations on the design and evaluation of pavements used by aircraft at civil airports and states that "airport pavement design must be based on a minimum 20-year structural life" and emphasizes that pavement must withstand repeated heavy aircraft loads without premature failure. FAA has not approved the use of pervious pavement for airside operations at any airport. FAA Advisory Circular 150/5370-10H provides standard specifications for materials and methods for use on airports, particularly for pavements serving aircraft greater than 30,000 pounds and does not include any specifications for pervious pavement for aprons, taxiways, or runways.

Aircraft within the project lease areas can weigh up to 100,000 pounds; however, pervious pavement lacks the structural strength to support these loads. Additionally, the aggregate base used in the pervious pavement systems does not provide enough compaction needed to resist forces from airport operations. The repeated high-pressure loads from heavy aircraft and ground support equipment can cause rutting, cracking, and surface degradation, leading to premature failure. These heavy loads can also compact the subgrade and stone reservoir, reducing both load-bearing capacity and infiltration performance. For these

reasons, the BMP manual recommends providing measures "to eliminate the intrusion of vehicles exceeding the design-loading rate of the system, which could compact and deform the surface course" of the pervious pavement system (NJDEP BMP Manual, Chapter 9.6).

Additionally, pervious pavement systems rely on a high air void content of 15-25% voids for the porosity of the permeable asphalt surface course (NJDEP BMP Manual, Chapter 9.6). This NJDEP requirement conflicts with FAA's standard construction specifications that limit air voids to 2-5% for conventional asphalt mixes under AC 150/5370-10H. This discrepancy highlights the incompatibility of pervious pavement with FAA-approved airside pavement designs. Furthermore, the high air void content reduces internal cohesion and resistance to shear forces when compared to the conventional asphalt design within apron areas. Under repeated aircraft and ground support equipment loading, the pervious pavement is susceptible to top-down cracking, raveling, and progressive loss of surface aggregate. Resulting surface deterioration and loose aggregate pose an unacceptable foreign object debris (FOD) risk within ramp areas. Loose aggregate generated from pervious pavement degradation can be ingested into aircraft engines or damage aircraft tires, creating safety risks to the aircraft and the surrounding environment. Due to these critical safety implications associated with FOD, pervious pavement is not suitable for airside operational areas within the leasehold.

In conclusion, pervious pavement is not a suitable use within the ramp space of the project areas due to structural limitations, failure to meet FAA-approved structural and material specifications for airside pavements, and the unacceptable risk of FOD resulting from surface degradation under aircraft loading. Airside operational conditions would subject pervious pavement to stresses that could lead to rapid deterioration and compromised performance. Accordingly, pervious pavement is limited to landside areas and pavement surfaces that will not be subjected to aircraft loading, where these structural, operational, and safety concerns do not apply. Given these constraints, the pervious pavement GI option in Table 5-2 is not feasible on ramp areas, and the project must rely on Table 5-3 quantity controls by utilizing an underground detention with upstream pretreatment.

3. Bioretention Basins

Bioretention basins, while recognized by NJDEP as Green Infrastructure BMPs under N.J.A.C. 7:8, are fundamentally incompatible with the project area due to NJDEP compliance constraints, FAA advisory circulars guidance, and federal wetland protection policy further discussed herein.

Previous geotechnical investigations within each of these leasehold areas reported high groundwater levels and mottling observed 1-2 feet below ground surface, indicating seasonal saturation and limited infiltration capacity. NJDEP guidance typically requires at least two feet of separation between bioretention basins and the seasonal high-water table which is a standard that cannot be met within these project areas. The supporting groundwater data is provided in the respective Engineering Reports for the East and South projects.

FAA Advisory Circular 150/5200-33C advises that when considering proposed land uses, developers must take into account whether the proposed land uses, including new development projects, will increase wildlife hazards. Pursuant to section Chapter 2.3.2 of this Advisory Circular, new stormwater

management facilities are included as a specific land use practice that potentially attracts hazardous wildlife. The design criteria for new stormwater management facilities in this FAA Advisory Circular (including concrete lined, linear-shaped water detention basins, eliminating vegetation, etc.) contradict the green infrastructure design requirements outlined in NJDEP's BMP. This circular also warns that "wetlands… can provide wildlife with ideal locations for feeding, loafing, reproduction, and escape" and recommends avoiding such features near airports. FAA CertAlert 98-05 further cautions that "grass species and other varieties of plants attractive to hazardous wildlife are not used" (FAA, CertAlert 98-05). It also recommends avoiding grasses that produce seeds or provide cover for wildlife. When combined with temporary ponding, a grass-lined bioretention basin creates ideal conditions for wildlife, which is precisely what FAA guidance says to avoid near runways.

Since the proposed projects are airside and involve expanding the airside pavement apron within the leaseholds, there is no available space within the leaseholds that can be utilized for bioretention basins that will not be adjacent to the existing taxiway and runways areas. FAA Advisory Circular 150/5200-33C recommends a "separation distance of 10,000 feet from these airports for any of the hazardous wildlife attractants" such as wetlands, stormwater detention ponds, and other water-holding features.

According to an FAA report in June 2025, wildlife aircraft strikes can result in significant aircraft damage and operations disruptions (FAA, Wildlife Hazard Mitigation). Most strikes occur during takeoff and landing, the most critical phases of flight. The project lease areas are within close proximity to adjacent runways and taxiways. Introducing bioretention basins, features that may hold water and attract birds within the project lease areas and specifically airside would increase the risk of wildlife strikes while also directly conflicting with FAA advisory circulars. Site location plans have been included as attachments to this memo depicting the lease areas directly adjacent to the existing taxiways.

Additionally, expanding wetland disturbance to construct another GI BMP contradicts both FAA advisory circulars and Executive Order 11990 (Protection of Wetlands). The Executive Order directs federal agencies to "minimize harm to wetlands which may result from such use" (United States, Executive Order 11990). Additional language regarding limiting impacts to regulated features within the leasehold is expanded upon in Section 2.4 Alternatives Analysis of the Flood Hazard Area Environmental Report prepared by Princeton Hydro.

FAA guidance recommends against use of submergent or emergent aquatic vegetation as natural filters within 10,000 feet of a runway used by jet aircraft (such as TEB), as these may be used by some species of flocking birds, such as blackbirds and waterfowl, for breeding or roosting activities. Proposing bioretention basins within the Signature lease areas may increase the risk of wildlife strikes in the adjacent taxiway and runway areas. FAA guidance also emphasizes that mitigation or creation of wetlands in close proximity to public airports can attract hazardous wildlife and recommends alternative stormwater BMPs that avoid open water or dense vegetation (FAA, AC150/5200-33C).

Additionally, due to the high water table at the site, it is impossible to maintain the minimum separation distance from the seasonal high-water table required in N.J.A.C. 7:8, Table 5-1. In conclusion, bioretention basins cannot be implemented within the leasehold areas because they would introduce vegetated features that may attract hazardous wildlife directly next to the airside operations within the

leasehold. This directly infringes on FAA regulatory guidelines and increases the risk of wildlife strikes given the location of the leasehold areas in relation to the adjacent runways. These BMPs also conflict with federal policy under Executive Order 11990, which stresses minimizing wetland disturbance. For these reasons, bioretention basins are impractical and contradictory to the design priorities for the project areas. Since bioretention systems (Tables 5-1 and 5-2) are not practicable adjacent to aircraft movement areas, the project meets performance standards using non-GI manufactured treatment devices (Table 5-3) and underground detention basin stormwater management measures.

3a. Small-scale Bioretention System Variations

The BMP Manual also allows for various forms of the small-scale bioretention system such as rain gardens, planter boxes, stormwater islands, street trenches, stormwater tree pit and others that provide a modified configuration of the bioretention basin system where project sites have limited space. According to Green Infrastructure BMPs, Chapter 9.7, "Regardless of the name, small-scale bioretention systems all generally consist of a soil bed planted with vegetation, storage to temporarily detain the runoff generated by the design storm, and/or an optional outlet structure (NJDEP BMP Manual, Chapter 9.7)." These operate in an identical way to the bio-retention basins noted in Section 3.0 above in that the vegetation in the soil bed provides the water quality treatment and the vegetative cover must be maintained at 85%.

The vegetation and detention requirement for the water quality design storm make these alternate forms of bioretention basins, also fundamentally incompatible with the project area due to NJDEP compliance constraints and FAA advisory circulars guidance. While recognized by NJDEP as Green Infrastructure BMPs under N.J.A.C. 7:8, they encounter many of the same implementation challenges that apply to standard bioretention systems. As stated above, FAA CertAlert 98-05 cautions that "grass species and other varieties of plants attractive to hazardous wildlife are not used" (FAA, CertAlert 98-05). It also recommends avoiding grasses that produce seeds or provide cover for wildlife. When combined with temporary ponding —even shallow ponding designed for 24–48 hours—a planter box creates ideal conditions for wildlife, which is precisely what FAA guidance says to avoid near runways. For these reasons, a planter box is not a feasible water quality system for the project areas. Additionally, any water quality design storm volume captured from roof runoff by a planter box is not contributing to the treatment of the proposed regulated motor vehicle surface area. Therefore, planter box implementation would not eliminate the need for the proposed BMPs provided throughout the project site from a water quality perspective for the proposed paved areas.

While the planter boxes are technically allowed to contribute to the quantity reductions, the planter box's small footprint and limited storage capabilities make this BMP design incapable of detaining the entire hangar roof area from a quantity reductions standpoint. Chapter 9.7 requires the downspout to have a flow diversion mechanism to allow roof runoff from storms larger than the water quality design storm to bypass the planter box. Further, this overflow must then be directed to another stormwater collection system or lawn area to avoid surface flooding. Therefore, incorporating planter boxes would not eliminate the need for the proposed BMPs provided throughout the project site from a water quantity perspective.

4. Constructed Wetlands

Constructed wetlands, while recognized by NJDEP as Green Infrastructure BMPs under N.J.A.C. 7:8, are also fundamentally incompatible with the project area due to NJDEP compliance constraints, FAA advisory circulars guidance, and federal wetland protection policy further discussed herein.

FAA Advisory Circular 150/5200-33C advises that when considering proposed land uses, developers must take into account whether the proposed land uses, including new development projects, will increase wildlife hazards. Pursuant to section Chapter 2.3.2 of this Advisory Circular, new stormwater management facilities are included as a specific land use practice that potentially attracts hazardous wildlife. The design criteria for new stormwater management facilities in this FAA Advisory Circular (including concrete lined, linear-shaped water detention basins, eliminating vegetation, etc.) contradict the green infrastructure design requirements outlined in NJDEP's BMP. This circular also warns that "wetlands… can provide wildlife with ideal locations for feeding, loafing, reproduction, and escape" and recommends avoiding such features near airports. FAA CertAlert 98-05 further cautions that "grass species and other varieties of plants attractive to hazardous wildlife are not used" (FAA, CertAlert 98-05). It also recommends avoiding grasses that produce seeds or provide cover for wildlife.

Since the proposed projects are airside and involve expanding the airside pavement apron within the leaseholds, there is no available space within the leaseholds that can be utilized for constructed wetlands that will not be adjacent to the existing taxiway and runways areas. FAA Advisory Circular 150/5200-33C recommends a "separation distance of 10,000 feet from these airports for any of the hazardous wildlife attractants" such as wetlands, stormwater detention ponds, and other water-holding features.

According to an FAA report in June 2025, wildlife aircraft strikes can result in significant aircraft damage and operations disruptions (FAA, Wildlife Hazard Mitigation). Most strikes occur during takeoff and landing, the most critical phases of flight. The project lease areas are within close proximity to adjacent runways and taxiways. Introducing constructed wetlands, features that hold water and attract birds within the project lease areas and specifically airside would increase the risk of wildlife strikes while also directly conflicting with FAA advisory circulars. Site location plans have been included as attachments to this memo depicting the lease areas directly adjacent to the existing taxiways.

Additionally, expanding wetland disturbance to construct another GI BMP contradicts both FAA advisory circulars and Executive Order 11990 (Protection of Wetlands). The Executive Order directs federal agencies to "minimize harm to wetlands which may result from such use" (United States, Executive Order 11990). Additional language regarding limiting impacts to regulated features within the leasehold is expanded upon in Section 2.4 Alternatives Analysis of the Flood Hazard Area Environmental Report prepared by Princeton Hydro.

NJDEP's BMP Manual specifies that standard constructed wetlands require "presence of a permanent pool" and "minimum density of vegetation 85%" (NJDEP BMP Manual, Chapter 10.4). FAA guidance recommends against use of submergent or emergent aquatic vegetation as natural filters within 10,000 feet of a runway used by jet aircraft (such as TEB), as these may be used by some species of flocking birds,

such as blackbirds and waterfowl, for breeding or roosting activities. Proposing wetlands within the Signature lease areas may increase the risk of wildlife strikes in the adjacent taxiway and runway areas. FAA guidance also emphasizes that mitigation or creation of wetlands in close proximity to public airports can attract hazardous wildlife and recommends alternative stormwater BMPs that avoid open water or dense vegetation (FAA, AC150/5200-33C).

In conclusion, constructed wetlands cannot be implemented within the leasehold areas because they would introduce open-water sources and vegetated features that attract hazardous wildlife directly next to the airside operations within the leasehold. This directly infringes on FAA regulatory guidelines and increases the risk of wildlife strikes given the location of the leasehold areas in relation to the adjacent runways. These BMPs also conflict with federal policy under Executive Order 11990, which stresses minimizing wetland disturbance. For these reasons, constructed wetlands are impractical and contradictory to the design priorities for the project areas. Since bioretention systems (Tables 5-1 and 5-2) are not practicable adjacent to aircraft movement areas, the project meets performance standards using non-GI manufactured treatment devices (Table 5-3) and underground detention basin stormwater management measures.

5. Infiltration GI BMPs – Sand Filter, Dry Well, and Infiltration Basin

Infiltration GI BMPs, including the ones listed above, are not feasible within the project leasehold areas due to existing subsurface conditions and site-specific design constraints. Pursuant to N.J.A.C. 7:8-5.4 and the NJDEP Stormwater Best Management Practices (BMP) Manual, infiltration BMPs require adequate vertical separation between the bottom of the BMP and the seasonal high-water table to ensure proper function and to prevent groundwater mounding. Previous geotechnical investigations within each of these leasehold areas reported high groundwater levels and mottling observed 1-2 feet below ground surface, indicating seasonal saturation and limited infiltration capacity. NJDEP guidance typically requires at least two feet of separation between infiltration BMPs and the seasonal high-water table which is a standard that cannot be met within these project areas. The supporting groundwater data is provided in the respective Engineering Reports for the East and South projects.

Additionally, raising infrastructure to provide proper separation from the seasonal high-water table from the bottom elevations of the infiltration BMPs is not possible because the proposed hangar and apron elevations must align with the existing runway, apron and taxiway grades to maintain operational compatibility and compliance with FAA design criteria. FAA airport design guidance requires continuity of grades and slope transitions across aircraft movement areas to ensure aircraft safety, effective drainage performance, and operational connectivity. Any increase in elevation to accommodate infiltration BMPs would disrupt the required interconnectivity of adjacent aprons and taxiways, exceed maximum slope requirements, and impair aircraft movement and ground operations within the leaseholds. Therefore, raising grades to achieve groundwater separation would not meet FAA design standards and operation requirements within the leaseholds.

In conclusion, infiltration BMPs cannot be implemented for either project due to existing site conditions and design limitations. The projects cannot meet the required separation from groundwater to comply with the NJDEP Stormwater BMP Manual and have limited flexibility to achieve separation

vertically due to existing infrastructure. For these reasons, infiltration BMPs are technically infeasible for these leasehold areas. Additionally, infiltration-based GI BMPs in Table 5-1 and 5-2 cannot meet the required groundwater separation; therefore, NJDEP quantity and quality objectives are met using manufactured treatment devices in Table 5-3 in combination with underground detention.

6. Vegetative GI BMPs – Green Roof, Grass Swale, and Vegetative Filter Strip

Green infrastructure best management practices (BMPs) that rely on stormwater treatment through filtration by vegetation or soil are constructed stormwater systems that require the installation and long-term maintenance of specific vegetative species, minimum vegetative coverage, and engineered soil media in accordance with the NJDEP Stormwater BMP Manual. Existing vegetation within the leaseholds consists of wetland vegetation and stabilized turf which does not meet NJDEP green infrastructure design or performance standards.

Vegetative stormwater GI BMPs such as green roofs, grass swales, and vegetative filter strips should not be utilized for both project leasehold areas due to safety constraints with close proximity to active runways. These BMPs introduce vegetated features that may attract birds, mammals, and other wildlife, creating conditions that can increase the risk of aircraft-wildlife strikes. FAA Advisory Circular 150/5200-33C recommends a separation distance of 10,000 feet between a runway used by jet aircraft (such as TEB), and stormwater detention ponds and other water-holding features (FAA, AC 150/5200-33C). FAA further states that "certain land uses have the potential to attract hazardous wildlife on or near public-use airports" and recommends avoiding features that provide "feeding, loafing, reproduction, and escape" opportunities for wildlife (FAA AC 150/5200-33C). Vegetative GI BMPs inherently rely on vegetation and may include shallow, temporary ponding to achieve NJDEP stormwater treatment standards. In proximity to active runways and taxiways, these design characteristics may introduce site conditions identified in federal guidance as potential wildlife attractants, and therefore are not practicable within the proposed leasehold areas.

The Department of the Air Force reinforces this concern in its Bird/Wildlife Aircraft Strike Hazard (BASH) Management Program, noting that "ephemeral (temporary) water sources, such as ponding, are typically shallow depressions that temporarily collect and hold water. This standing water is an attractant to several hazardous bird groups such as gulls, wading birds, shore birds, and waterfowl" (Dept. of the Air Force Instruction 91-212). Similarly, FAA AC 150/5320-5D emphasizes wildlife considerations during design: "In the case of airfields, give special consideration to the attraction of wildlife to the facility. Waterfowl, in particular, create a significant safety hazard to aircraft and therefore must be considered during the design phase" (FAA AC 150/5320-5D). Vegetative green infrastructure BMPs are typically designed to incorporate shallow surface storage and dense vegetation to achieve stormwater treatment objectives. When located within close proximity to active runways, these design characteristics may introduce site conditions that federal guidance recognizes as potential wildlife attractants.

FAA data confirms wildlife aircraft strikes can result in significant aircraft damage and operations disruptions (FAA, Wildlife Hazard Mitigation). Wildlife strike risk is greatest during aircraft operations at low altitudes, noting that "the landing phases of flight are when 61% of bird strikes occur, and the take-off run and climb phases are when 36% of strikes occur, with the remaining 3% occurring when aircraft is

en-route" (Alliance for Aviation Across America). These statistics demonstrate that aircraft are most vulnerable to wildlife strikes in areas close to the ground and immediately adjacent to runways. Vegetative GI BMPs introduce dense vegetation identified in FAA guidance as potential wildlife attractants; therefore, locating these systems near active runways and taxiways may increase wildlife strike risk during the most critical phases of flight. The Signature leasehold areas are directly adjacent to active runways and taxiways, as shown on the attached site location plans; therefore, implementation of BMPs within these areas that include open water, submergent or emergent vegetation or other wildlife attractants may create conditions that should be avoided to comply with airport design and operational safety considerations.

Pursuant to N.J.A.C. 7:8 and the NJDEP Stormwater BMP Manual, vegetative GI BMPs are constructed stormwater management systems that require a minimum of 85 percent vegetative coverage and the use of specified plant species selected to meet NJDEP stormwater runoff quality treatment objectives (NJDEP BMP Manual: Chapter 9.4, 9.7, 9.10). These requirements are specific to NJDEP-compliant GI BMPs and are distinct from general site stabilization or incidental vegetation. Vegetative GI BMPs are designed to promote sustained vegetative growth to meet stormwater treatment objectives, which may create habitat features for birds and small mammals, increasing the likelihood of wildlife strikes. FAA CertAlert 98-05 warns that "airport operators should ensure that grass species and other varieties of plants attractive to hazardous wildlife are not used" (FAA CertAlert 98-05). As such, the vegetative density and species required to meet NJDEP green infrastructure BMP performance standards may introduce food sources, cover, or habitat features identified in federal aviation guidance as incompatible with safe airport operations within leasehold areas in proximity to active runways.

Due to the NJDEP's requirements for constructed vegetative GI BMPs, these systems are not feasible within the projects leasehold areas due to their proximity to active taxiways and runways. Vegetative BMP design features may introduce conditions identified in federal aviation guidance as potential attractants near aircraft movement areas. Additionally, the FAA and Air Force guidance discourages these features near runways and taxiways. The implementation of NJDEP-compliant vegetative GI BMPs in these locations would conflict with airport design and operation safety requirements; therefore, they cannot be considered a viable stormwater option for the project leasehold areas. In conclusion, vegetative GI BMPs (Table 5-1) are not practicable in close proximity to active runways; therefore, the project must meet performance standards using Table 5-3 measures.

7. GI Manufactured Treatment Devices (MTDs)

For a Manufactured Treatment Device (MTD) to qualify as Green Infrastructure (GI) under N.J.A.C. 7:8, it must meet the GI definition at N.J.A.C. 7:8-1.2. Specifically, the MTD must infiltrate into the subsoil and/or treat stormwater runoff through filtration by vegetation or soil. Above-ground MTDs that use biofiltration media and vegetation, such as tree boxes or planter style systems, meet this definition. A below-grade system without vegetation is considered GI only when it infiltrates stormwater into the surrounding subsoil and maintains a minimum of two feet of separation from the seasonal high water table (SHWT). As part of our evaluation, all sixteen (16) NJDEP-certified GI MTDs were reviewed, and none are feasible for either project given that each device requires either vegetation-based filtration or infiltration to qualify as GI.

As stated previously, vegetated GI BMPs cannot be used within either project leasehold area because of FAA safety constraints related to proximity to active runways. Vegetated GI BMPs can attract birds, mammals, and other wildlife, which increases the risk of aircraft wildlife strikes. For this reason, all above-ground vegetation-based NJDEP approved GI MTDs are discouraged within the airside portions of the project areas.

In addition, infiltration-based GI BMPs are not feasible due to existing subsurface conditions. Both leasehold areas have shallow groundwater and low-permeability Meadowlands soils. Due to these conditions, infiltration cannot be achieved and the project sites cannot meet the required separation from the SHWT to comply with the NJDEP Stormwater BMP Manual. Existing utilities and airside infrastructure also limit the ability to obtain additional vertical separation. Since the project sites cannot meet the requirements for infiltration and separation from the SHWT, all NJDEP approved GI MTDs with infiltration are not feasible within the airside portion of the project leasehold areas.

As a result, neither of the two GI compliance pathways is achievable within these locations. Vegetation-based filtration is not allowed due to FAA wildlife hazard restrictions, and infiltration is not possible due to groundwater and soil limitations. To meet water quality treatment requirements, both projects propose non-GI Manufactured Treatment Devices (MTDs) for pretreatment within the airside drainage areas. Since no NJDEP-approved GI MTD can be used due to restrictions on vegetated systems and the inability to meet infiltration and SHWT separation requirements, non-GI MTDs represent the only safe and technically feasible solution. This approach allows the project to meet NJDEP water quality standards while maintaining the required airside operational safety.

8. BMP Treatment Combinations

A combination of various BMPs were also analyzed for potential solutions of implementing green-infrastructure in series for the proposed development where an individual BMP may fall short from either a water quality or water quantity perspective. The specific combination of a cistern and planter box has been evaluated in more detail and determined infeasible for the project leasehold areas.

The main challenge with the various green infrastructure BMPs is the open environment, temporary ponding, and vegetation requirements which are inherent to green infrastructure systems. Even small planter-style bioretention systems, such as a planter box, rely on engineered soil media, dense vegetation, and temporary storage of stormwater to achieve treatment performance, creating precisely the type of habitat and standing-water conditions that federal guidance identifies as significant wildlife hazards in airside environments. As previously stated, FAA Advisory Circular 150/5200-33C discourages vegetated stormwater features and any BMPs that create temporary ponding or wildlife attractants within 10,000 feet of a runway.

Since the individual BMP implementation of a planter box is not technically feasible for the project areas, the combination of a planter box with another BMP (cistern) does not create a viable design solution to address either water quality or water quantity requirements. Because planter-box bioretention systems directly conflict with FAA wildlife hazard advisory circulars, they cannot be used alone or in any combination with cisterns or other open environment BMPs to meet the stormwater

quantity or quality standards for this proposed development, regardless of whether they follow a cistern in a treatment train.

9. Stormwater Mitigation

NJDEP stormwater regulations require that green infrastructure manage runoff as close to its source as practicable. The definition in N.J.A.C. 7:8-1.2 states:

> "Green infrastructure means a stormwater management measure that manages stormwater close to its source" (N.J.A.C. 7:8).

This principle is reinforced in N.J.A.C. 7:8-5.3, which mandates that major developments meet groundwater recharge, stormwater runoff quality, and quantity standards through the use of green infrastructure BMPs designed for small drainage areas. The NJDEP BMP Manual furthers this intent, stating that GI MTDs must "manage stormwater close to its source" (BMP Chapter 9.5). The purpose is to improve pollutant removal efficiency by treating stormwater runoff before it travels long distances and to mimic natural hydrology by promoting infiltration locally which helps maintain groundwater recharge and reduces downstream flooding. Relocating stormwater mitigation further away from the project site contradicts these core requirements and undermines NJDEP's intent for decentralized treatment.

Additionally, Executive Order 11990 (Protection of Wetlands) directs federal agencies to "avoid undertaking or providing assistance for new construction located in wetlands unless there is no practicable alternative" and "minimize harm to wetlands which may result from such use." Expanding wetland disturbance for stormwater BMPs contradicts this executive order and further creates habitats that attract birds and mammals, which are the species most commonly involved in wildlife strikes. The designs as presented propose stormwater infrastructure in the immediate vicinity of the proposed improvements to comply with regulations by utilizing green infrastructure BMP methods to the best extent possible supplemented with non-GI measures to best meet the guidance from both federal and state agencies. Stormwater mitigation must occur near its source, as required by N.J.A.C. 7:8 and NJDEP's BMP Manual, and must avoid alternatives that encroach further into the wetland areas. Relocating BMPs further away from the project sites violates NJDEP's regulations and risks wetland disturbance making this approach unsuitable.

Green Infrastructure Opportunities

In an effort to further reduce the green infrastructure deficit associated with this hardship exception request and to support the broader objectives of sustainable stormwater management, the Applicant commits to identifying, evaluating, and, where practicable, implementing additional green infrastructure opportunities within the existing leasehold areas outside the limits of the proposed projects.

As part of this effort, a comprehensive assessment of existing site conditions within landside areas of the leasehold will be conducted to determine the feasibility of incorporating additional green infrastructure measures. This evaluation will include examining opportunities to replace existing conventional pavement surfaces with pervious pavement systems in locations not subject to aircraft loading or other operational

constraints. Potential areas will be reviewed to ensure that any proposed improvements can be implemented while maintaining compliance with all applicable FAA operational, safety, and maintenance requirements.

While the proposed projects currently incorporate green infrastructure measures to the maximum extent practicable, the Applicant recognizes the value of pursuing additional opportunities that may further reduce the green infrastructure deficiencies and improve the overall management of stormwater runoff within the leasehold. Accordingly, the Applicant's commitment to evaluate and pursue additional green infrastructure opportunities represents a meaningful step toward furthering the objectives of N.J.A.C. 7:8 and providing incremental stormwater management benefits in areas that currently lack green infrastructure treatment. Through this continued effort, the Applicant seeks to support long-term sustainability goals while balancing the unique operational and safety considerations associated with airport facilities.

CONCLUSION

In conclusion, the project has been designed to comply with design and performance standards per N.J.A.C. 7:8. The proposed stormwater designs meet the current standards for stormwater quality, recharge, and quantity requirements. Green infrastructure BMP methods have been utilized to the best extent possible and supplemented with non-GI measures for both projects because strict compliance with the green infrastructure requirements at N.J.A.C. 7:8 cannot be achieved. The proposed stormwater design incorporates non-GI Manufactured Treatment Devices (MTDs) to meet water quality standards and underground detention systems with upstream pretreatment to address water quantity. Furthermore, additional green infrastructure measures will be evaluated elsewhere within the leasehold area, outside the project limits, in an effort to minimize the proposed deficit.

This design utilizes a combination of stormwater management methods to ensure that NJDEP performance standards are upheld without compromising aircraft safety operating on the runways and taxiways adjacent to the airport leasehold areas. Additional supporting evidence for the hardship exception with regard to N.J.A.C. 7:13-15.1(c) is provided in Section 2.3 Hardship Exception for an Individual Permit of the Flood Hazard Area Environmental Report prepared by Princeton Hydro. Therefore, the applicant respectfully requests a NJDEP Green Infrastructure Hardship Exception to allow the use of Table 5-3 measures in lieu of the GI BMPs listed in Table 5-1 and Table 5-2. This request is necessary to satisfy N.J.A.C. 7:8 performance standards while maintaining compliance with FAA safety and operational requirements within the leasehold areas.

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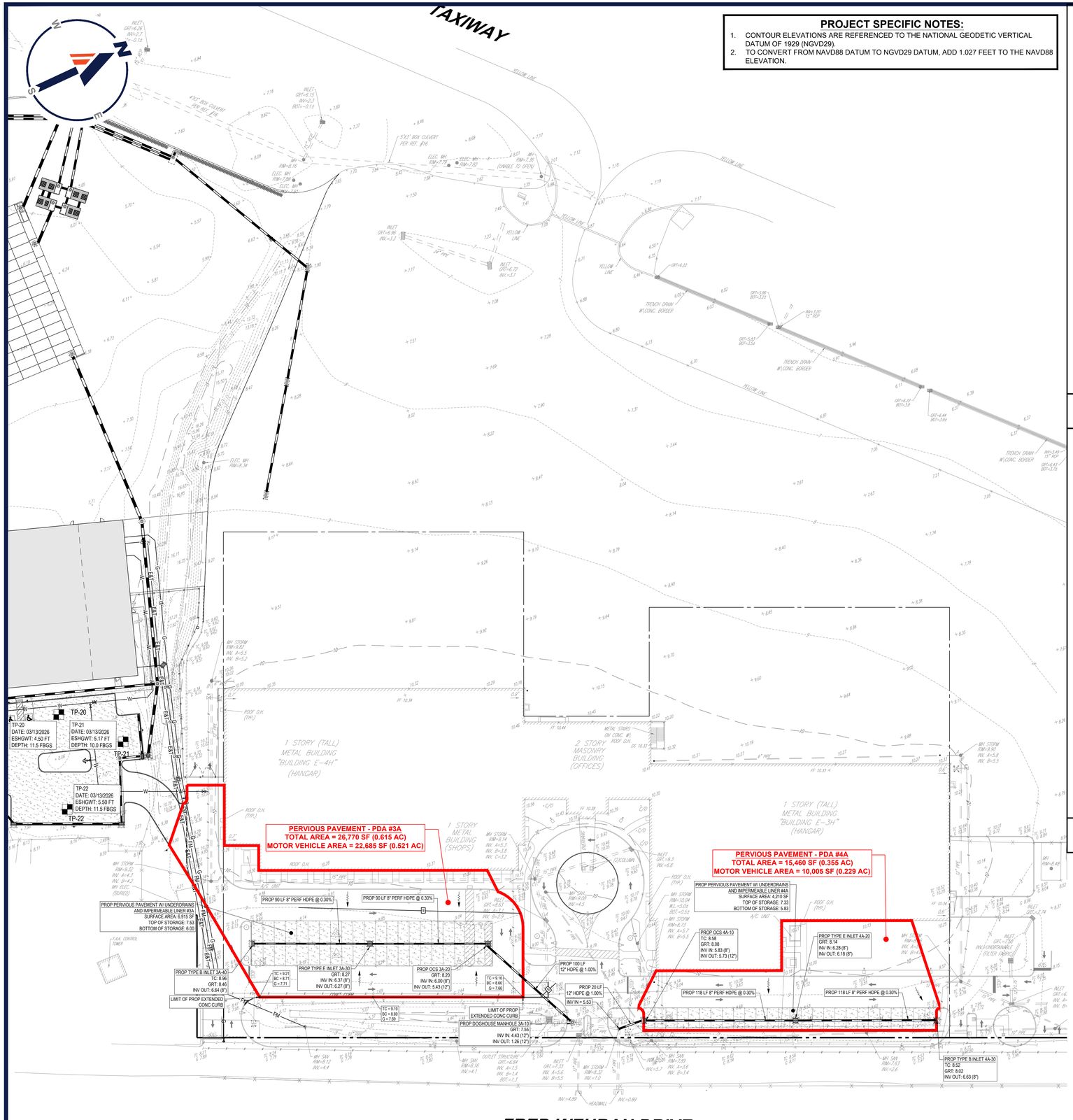
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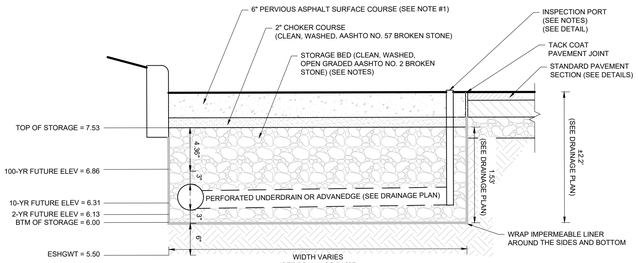
APPENDIX L.2

Pervious Pavement Plan at Signature East

PROJECT SPECIFIC NOTES:

1. CONTOUR ELEVATIONS ARE REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29).
2. TO CONVERT FROM NAVD88 DATUM TO NGVD29 DATUM, ADD 1.027 FEET TO THE NAVD88 ELEVATION.



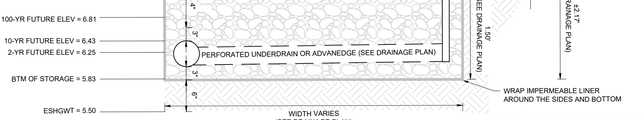


SEASONAL HIGH WATER TABLE WAS OBSERVED AT 12-24" BELOW EXISTING GRADE AT ELEVATION 5.50 PER GZA GEOENVIRONMENTAL, INC. TEST PIT TP-22 DATED 3/13/2026. THE PROPOSED STORAGE BED OF THE PERVIOUS PAVEMENT SYSTEM IS TO BE WRAPPED IN AN IMPERMEABLE LINER TO PREVENT GROUNDWATER FROM SEEPING INTO THE SYSTEM.

NOTES:
1. PERMEABLE ASPHALT SURFACE COURSE TO HAVE 15-25% POROSITY. FOR PARKING AREAS, A POLYMER MODIFIED BINDER PG 64E-22 MUST BE USED. PERVIOUS PAVEMENT SURFACE COURSE TO HAVE MINIMUM TESTED INFILTRATION RATE OF 6.4 IN/HR (20 IN/HR IF USED FOR STORMWATER QUALITY CONTROL). REFER TO GEOTECHNICAL ENGINEERING/REPORT FOR THICKNESS.
2. REFER TO NJ SWBMP MANUAL CHAPTER 9.6 AND NJDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION FOR OPEN-GRADED FRICTION COURSE COMPOSITION, MIX DESIGN, & INSTALLATION TEMPERATURE SPECIFICATIONS.
3. STORAGE BED AGGREGATE MUST BE PLACED IN LOOSE LIFTS NOT TO EXCEED 6 INCHES AND COMPACTED USING PLATE COMPACTORS PER NJ SWBMP MANUAL.
4. AT LEAST ONE INSPECTION PORT, WITH A REMOVABLE CAP, MUST BE PROVIDED AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE PERFORATED SECTION OF THE NETWORK OF PIPES WITH ITS LOCATION DENOTED IN THE MAINTENANCE PLAN. THE INSPECTION PORT MUST BE PLACED AT LEAST 3 FEET FROM ANY EDGE. ADDITIONALLY, EACH INSPECTION PORT MUST BE FLUSH WITH THE SURFACE OF THE SURFACE LAYER AND EXTEND DOWN TO THE UNDERDRAIN PIPE NETWORK. THE SIZE OF THE INSPECTION PORT MUST BE LARGE ENOUGH TO ALLOW FOR MAINTENANCE ACTIVITIES.
5. SEALANT, TOP COAT, AND OTHER TREATMENTS SHALL NOT BE USED ON THE PERVIOUS ASPHALT PAVEMENT COURSE. CONSTRUCTION MAY NOT TAKE PLACE DURING RAIN OR SNOW, NOR WHEN THE SUBSOIL IS FROZEN.
6. POST-CONSTRUCTION TESTING OF THE PERMEABLE ASPHALT SURFACE COURSE IS REQUIRED AND MUST CONFORM TO THE METHODS OF EITHER ASTM C1701: STANDARD TEST METHOD FOR INFILTRATION RATE OF IN-PLACE PERVIOUS CONCRETE OR ASTM C1781: STANDARD TEST METHOD FOR SURFACE INFILTRATION RATE OF PERMEABLE UNIT PAVEMENT SYSTEMS. AT LEAST THREE LOCATIONS MUST BE USED FOR THE TEST, AND THEY SHOULD BE SPACED EVENLY ACROSS THE PERVIOUS PAVING SYSTEM. FAILURE TO ACHIEVE THE MINIMUM DESIGN INFILTRATION RATE OF THE SURFACE COURSE AT ONE OR MORE LOCATION INDICATES THE SYSTEM CANNOT BE PUT IN SERVICE UNTIL THE SYSTEM IS CORRECTED TO YIELD ALL PASSING VALUES. UNLIKE THE TEST METHODOLOGY OUTLINED IN THE ASTM STANDARDS, THE TEST RESULTS MUST NOT BE AVERAGED. INCLUDE A LOG FOR RECORDING EACH LOCATION AND ITS TEST RESULT FOR FUTURE REFERENCE IN THE MAINTENANCE PLAN.
7. PERVIOUS PAVEMENT AREA SHALL BE PROTECTED FROM SEDIMENT-LADEN RUNOFF DURING CONSTRUCTION TO AVOID REDUCED POROSITY.

1 ***PERVIOUS ASPHALT PAVEMENT WITH UNDERDRAIN #3A***

NOT TO SCALE (NJ-S010103 - 01/2025)



SEASONAL HIGH WATER TABLE WAS OBSERVED AT 12-24" BELOW EXISTING GRADE AT ELEVATION 5.50 PER GZA GEOENVIRONMENTAL, INC. TEST PIT TP-22 DATED 3/13/2026. THE PROPOSED STORAGE BED OF THE PERVIOUS PAVEMENT SYSTEM IS TO BE WRAPPED IN AN IMPERMEABLE LINER TO PREVENT GROUNDWATER FROM SEEPING INTO THE SYSTEM.

NOTES:
1. PERMEABLE ASPHALT SURFACE COURSE TO HAVE 15-25% POROSITY. FOR PARKING AREAS, A POLYMER MODIFIED BINDER PG 64E-22 MUST BE USED. PERVIOUS PAVEMENT SURFACE COURSE TO HAVE MINIMUM TESTED INFILTRATION RATE OF 6.4 IN/HR (20 IN/HR IF USED FOR STORMWATER QUALITY CONTROL). REFER TO GEOTECHNICAL ENGINEERING/REPORT FOR THICKNESS.
2. REFER TO NJ SWBMP MANUAL CHAPTER 9.6 AND NJDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION FOR OPEN-GRADED FRICTION COURSE COMPOSITION, MIX DESIGN, & INSTALLATION TEMPERATURE SPECIFICATIONS.
3. STORAGE BED AGGREGATE MUST BE PLACED IN LOOSE LIFTS NOT TO EXCEED 6 INCHES AND COMPACTED USING PLATE COMPACTORS PER NJ SWBMP MANUAL.
4. AT LEAST ONE INSPECTION PORT, WITH A REMOVABLE CAP, MUST BE PROVIDED AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE PERFORATED SECTION OF THE NETWORK OF PIPES WITH ITS LOCATION DENOTED IN THE MAINTENANCE PLAN. THE INSPECTION PORT MUST BE PLACED AT LEAST 3 FEET FROM ANY EDGE. ADDITIONALLY, EACH INSPECTION PORT MUST BE FLUSH WITH THE SURFACE OF THE SURFACE LAYER AND EXTEND DOWN TO THE UNDERDRAIN PIPE NETWORK. THE SIZE OF THE INSPECTION PORT MUST BE LARGE ENOUGH TO ALLOW FOR MAINTENANCE ACTIVITIES.
5. SEALANT, TOP COAT, AND OTHER TREATMENTS SHALL NOT BE USED ON THE PERVIOUS ASPHALT PAVEMENT COURSE. CONSTRUCTION MAY NOT TAKE PLACE DURING RAIN OR SNOW, NOR WHEN THE SUBSOIL IS FROZEN.
6. POST-CONSTRUCTION TESTING OF THE PERMEABLE ASPHALT SURFACE COURSE IS REQUIRED AND MUST CONFORM TO THE METHODS OF EITHER ASTM C1701: STANDARD TEST METHOD FOR INFILTRATION RATE OF IN-PLACE PERVIOUS CONCRETE OR ASTM C1781: STANDARD TEST METHOD FOR SURFACE INFILTRATION RATE OF PERMEABLE UNIT PAVEMENT SYSTEMS. AT LEAST THREE LOCATIONS MUST BE USED FOR THE TEST, AND THEY SHOULD BE SPACED EVENLY ACROSS THE PERVIOUS PAVING SYSTEM. FAILURE TO ACHIEVE THE MINIMUM DESIGN INFILTRATION RATE OF THE SURFACE COURSE AT ONE OR MORE LOCATION INDICATES THE SYSTEM CANNOT BE PUT IN SERVICE UNTIL THE SYSTEM IS CORRECTED TO YIELD ALL PASSING VALUES. UNLIKE THE TEST METHODOLOGY OUTLINED IN THE ASTM STANDARDS, THE TEST RESULTS MUST NOT BE AVERAGED. INCLUDE A LOG FOR RECORDING EACH LOCATION AND ITS TEST RESULT FOR FUTURE REFERENCE IN THE MAINTENANCE PLAN.
7. PERVIOUS PAVEMENT AREA SHALL BE PROTECTED FROM SEDIMENT-LADEN RUNOFF DURING CONSTRUCTION TO AVOID REDUCED POROSITY.

2 ***PERVIOUS ASPHALT PAVEMENT WITH UNDERDRAIN #4A***

NOT TO SCALE (NJ-S010103 - 01/2025)

LEGEND

APPROX LOCATION OF SOIL TEST PIT PER GZA GEOENVIRONMENTAL, INC. PLOT PLAN DATED 03/19/2026 — TP #

THIS PLAN TO BE UTILIZED FOR GRADING, DRAINAGE AND UTILITIES PURPOSES ONLY.

CONTRACTOR TO CONFIRM LOCATION AND DEPTH OF UTILITY CROSSINGS AND PIPE CONNECTIONS PRIOR TO CONSTRUCTION

PERVIOUS PAVEMENT DESIGN TO BE FINALIZED SUBJECT TO UPDATED SURVEY INFORMATION AND GEOTECHNICAL TESTING

NOTE: ALL OR A PORTION OF THIS LOT LIES IN A FLOOD HAZARD AREA. CERTAIN ACTIVITIES IN FLOOD HAZARD AREAS AND RIPARIAN ZONES ARE REGULATED BY THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND SOME ACTIVITIES MAY BE PROHIBITED ON THIS SITE OR MAY FIRST REQUIRE A FLOOD HAZARD AREA PERMIT. CONTACT THE DIVISION OF LAND USE REGULATION AT (609) 777-0454 FOR MORE INFORMATION PRIOR TO ANY CONSTRUCTION ONSITE.

40 20 10 0 40
SCALE: 1" = 40'

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SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

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REV	DATE	COMMENT	DRAWN BY / CHECKED BY

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PROJECT No.:	NJC240059.00-0A
DRAWN BY:	CTC
CHECKED BY:	BE
DATE:	07/09/2026
CAD I.D.:	P-SWSD-GDUL

PROJECT:

PERVIOUS PAVEMENT PLAN

FOR

SIGNATURE FLIGHT SUPPORT LLC

SIGNATURE AVIATION

PROPOSED EAST SIDE RAMP EXPANSION & HANGAR

TETERBORO AIRPORT
FRED WEHRAN DRIVE
BOROUGH OF TETERBORO
BERGEN COUNTY, NEW JERSEY

BOHLER
BOHLER ENGINEERING NJ, LLC
125 HALF MILE ROAD, SUITE 207
RED BANK, NJ 07701
Phone: (732) 825-6800
www.BohlerEngineering.com
NJ CERT. OF AUTHORIZATION NO. 24GA28161700 & MH000122

J.A. HOLZAPFEL

PROFESSIONAL ENGINEER
NEW JERSEY LICENSE No. 73500

SHEET TITLE:

PERVIOUS PAVEMENT PLAN

SHEET NUMBER:

1 OF 1

ORG. DATE - 07/09/2026

P:\NJC\2024\NJC240059.00\CAD\DRAWINGS\PLAN SETS\STORMWATER MANAGEMENT SITE DEVELOPMENT PLANS\P-SWSD-GDUL-NJC240059.00-0A---LAYOUT C-201 UTIL

APPENDIX L.3

Pervious Pavement Plan at Signature South

1. EXISTING TOPOGRAPHY AND SITE FEATURES SHOWN ARE BASED ON A DRAWING TITLED SITE DEVELOPMENT LINE, 20+59 ± ACRES BY THE PORT AUTHORITY OF NY & NJ, DATED MARCH 22, 2002, NUMBER TEB-6009 AND SURVEY PERFORMED BY LANGAN ENGINEERING, DATED JANUARY 20, 2004.

EXISTING TAXIWAY "QUEBEC"

N 43°-2'-0" E, 14,429.83'

EXISTING TAXIWAY "GULF"

SIGNATURE LEASE LINE

POTENTIAL PERVIOUS
PAVEMENT AREA #1 = 6,200 SF
DRAINAGE AREA = 16,450 SF
MV AREA = 13,500 SF

TOTAL POTENTIAL PERVIOUS
PAVEMENT AREA
APPROXIMATELY 17,900 SF

POTENTIAL PERVIOUS
PAVEMENT AREA #2 = 5,400 SF
DRAINAGE AREA = 15,750 SF
MV AREA = 13,300 SF

POTENTIAL PERVIOUS
PAVEMENT AREA #4 = 2,600 SF
DRAINAGE AREA = 7,400 SF
MV AREA = 6,650 SF

POTENTIAL PERVIOUS
PAVEMENT AREA #3 = 3,700 SF
DRAINAGE AREA = 10,350 SF
MV AREA = 9,300 SF

465-FT

225-FT

225-FT

177-FT

PROPOSED HANGAR 4
40,000± SF
F.F.E. = 9.0 NAVD 88

PROPOSED HANGAR 5
40,000± SF
F.F.E. = 9.0 NAVD 88

TWO STORY INTERIOR OFFICE
GROUND LEVEL 7,500± SF (TOTAL 15,000± SF)
F.F.E. = 9.0 NAVD 88

ONE STORY INTERIOR OFFICE
7,200± SF
F.F.E. = 9.0 NAVD 88

22.5°

SIGNATURE LEASE LINE

LINDBERGH DRIVE

80 0 40 80
SCALE IN FEET

Date	Description	No.
REVISIONS		

SIGNATURE DANIEL MIOLA DATE SIGNED
PROFESSIONAL ENGINEER NJ Lic. No. 24GE04676300

LANGAN
Langan Engineering and Environmental Services, LLC.
300 Kimball Drive
Parsippany, NJ 07054
T: 973.560.4900 F: 973.560.4901 www.langan.com
NJ CERTIFICATE OF AUTHORIZATION NO. 24GA27996400

Project
SIGNATURE SOUTH EXPANSION
TETERBORO AIRPORT
BOROUGH OF MOONACHIE BLOCK 76, LOT 1.02
BOROUGH OF TETERBORO BLOCK 203, LOT 1
BERGEN COUNTY NEW JERSEY

Drawing Title
PERVIOUS PAVEMENT IMPLEMENTATION AREA

Project No. 001642424	FG01
Date 6/15/2026	
Drawn By SR	
Checked By CS/KMR	

LANGAN
Project No. 001642424

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Filename: \\langan.com\data\NYC\data4\001642424\Cadd Data - 001642424\2D-Design Files\Civil\2025 Finalized Stormwater Design\FG01 - Pervious Pavement Implementation Area.dwg Date: 6/16/2026 Time: 12:19 User: srhatican Style Table: Langan.stb Layout: FG01

APPENDIX L.4

Coastal Resource Coordination

From: Anderson, Ryan [DEP] <Ryan.Anderson@dep.nj.gov>
Sent: Wednesday, August 5, 2026 2:15 PM
To: Ivy Rose <irose@princetonhydro.com>
Cc: Michael Rehman <mrehman@princetonhydro.com>
Subject: RE: CDT Question - 0262-06-0001.1 - PORT AUTHORITY OF NY/NJ - LUP260001

Ivy
In the Meadowlands, NJDEP only regulates work below the mean high water line under the CZM regulations. Since this project didn't propose that type of work, we didn't issue a specific coastal permit. Therefore, you can presume that the project is consistent with New Jersey's Coastal Zone Management program.
Thanks
Ryan

Ryan J. Anderson (he/him)
Manager
NJ Department of Environmental Protection
Division of Land Resource Protection (DLRP)
Bureau of Freshwater Wetland and Highlands Permitting
501 East State Street, Trenton, NJ 08625
ryan.anderson@dep.nj.gov
T (609) 940-5268

From: Ivy Rose <irose@princetonhydro.com>
Sent: Tuesday, August 4, 2026 11:43 AM
To: Anderson, Ryan [DEP] <Ryan.Anderson@dep.nj.gov>
Cc: Michael Rehman <mrehman@princetonhydro.com>
Subject: [EXTERNAL] CDT Question - 0262-06-0001.1 - PORT AUTHORITY OF NY/NJ - LUP260001

Hello Ryan,

Ricondo is working with the FAA to finalize the EA, which stated that DEP will confirm the consistency of the project with the federal consistency requirements of the Coastal Zone Management Protection Act.

The Section 401 / FHA permit application submitted to DLRP in January contained a request for the coastal zone consistency determination, and the permit issued on 7/17 did not contain language pertaining to the determination. This is understandable given that the sites are not located within any areas requiring a permit under the CZMP, however, we anticipate that the FAA will want to include something definitive in the Final EA to satisfy this component. Would you be able to confirm this?

Thank you,
Ivy

Ivy Rose, PWS (she/her)
Environmental Scientist / Project Manager
Regulatory Compliance & Wildlife Surveys
908-824-2251 (office)
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