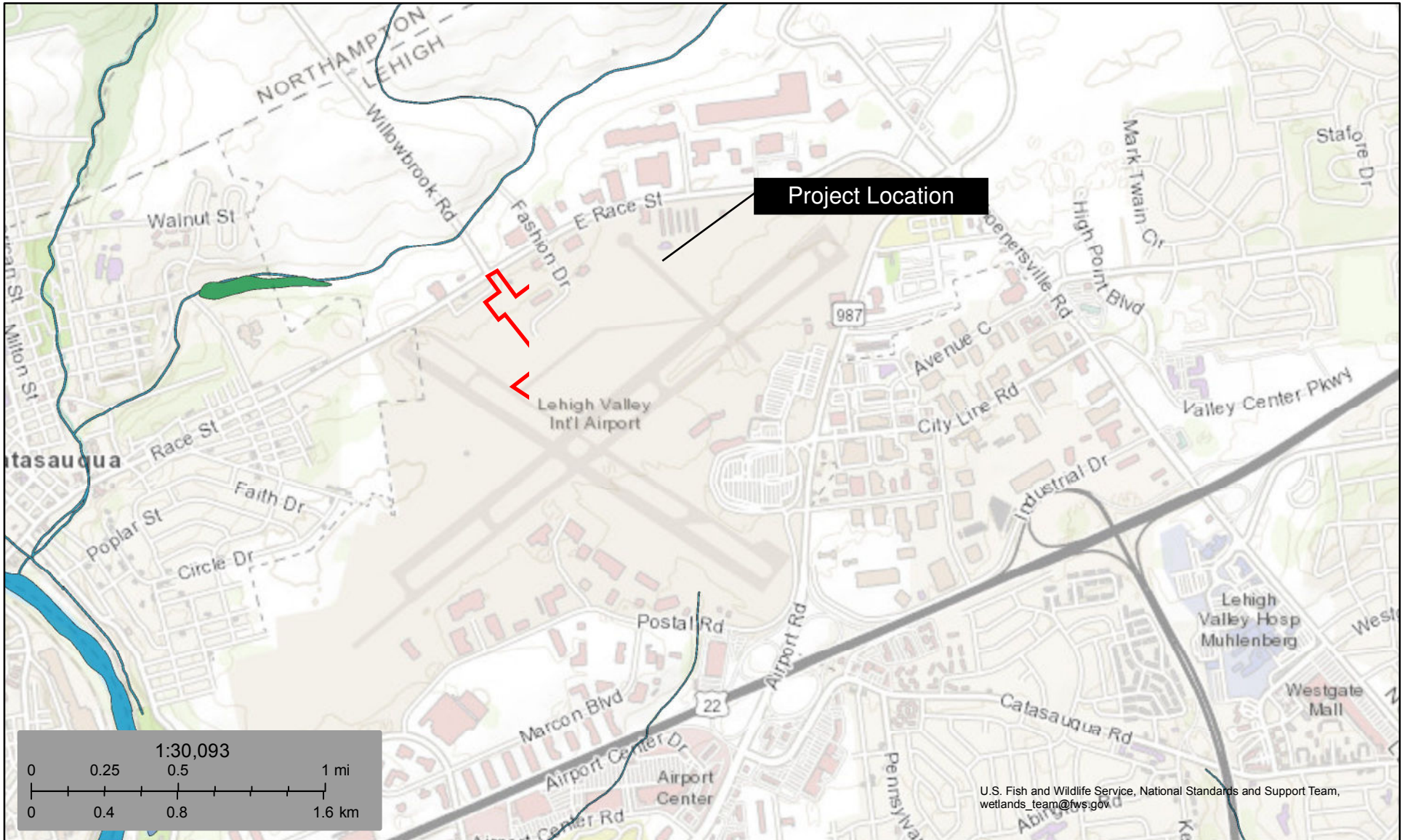


**Appendix J**

Water Resources



August 12, 2022

**Wetlands**

- |  |   |  |
|--|---|--|
|  Estuarine and Marine Deepwater |  Freshwater Emergent Wetland       |  Lake     |
|  Estuarine and Marine Wetland   |  Freshwater Forested/Shrub Wetland |  Other    |
|  |  Freshwater Pond                   |  Riverine |

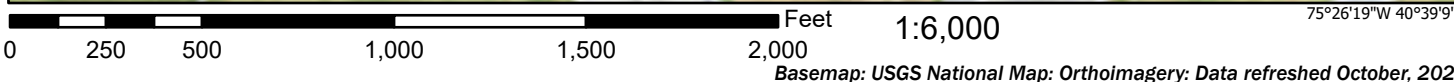
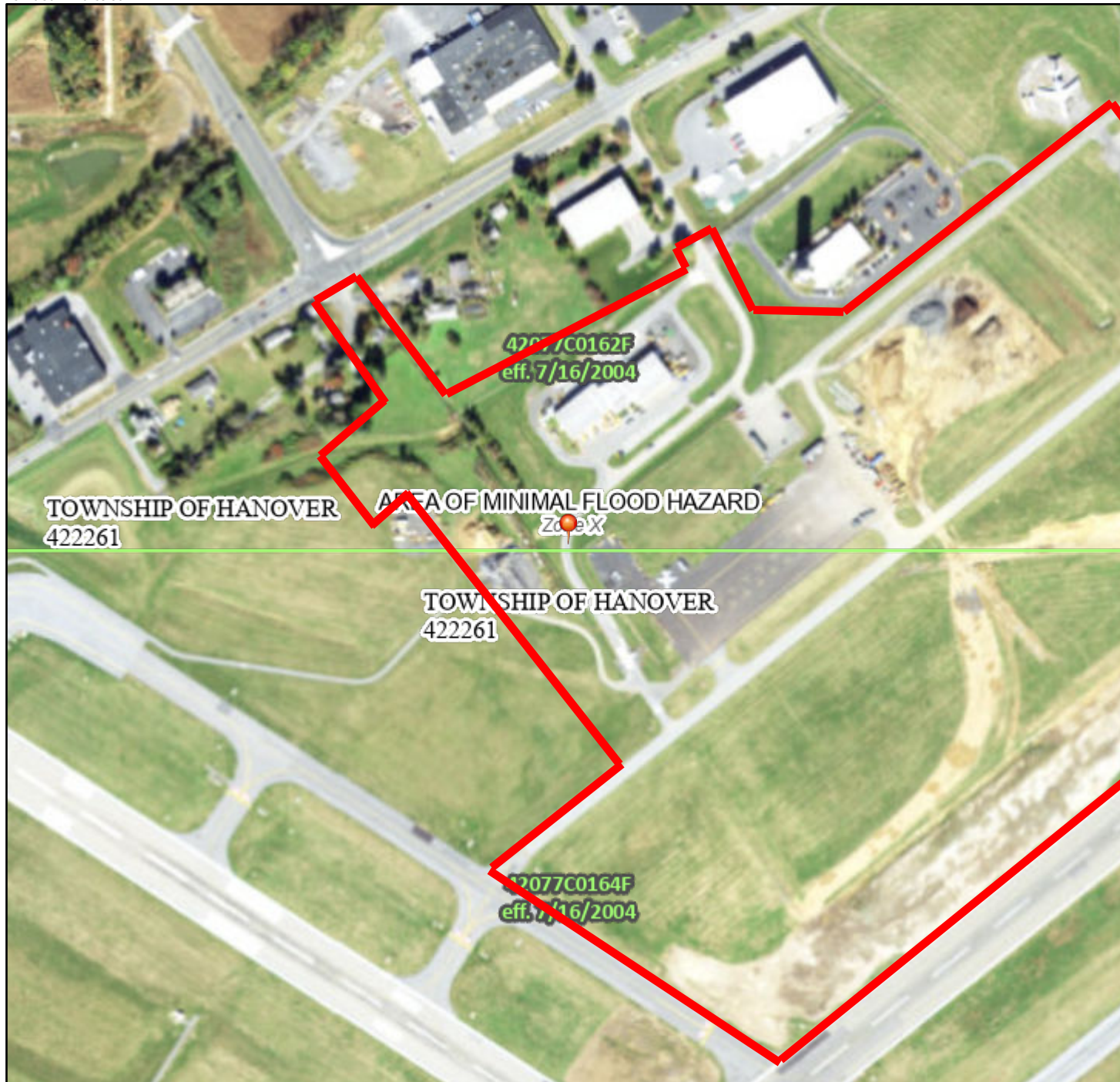
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



# National Flood Hazard Layer FIRMMette



75°26'56"W 40°39'36"N



## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- |                                    |  |
|------------------------------------|--|
| <b>SPECIAL FLOOD HAZARD AREAS</b>  | Without Base Flood Elevation (BFE)<br><i>Zone A, V, A99</i>  |
|                                    | With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>   |
|                                    | Regulatory Floodway  |
| <b>OTHER AREAS OF FLOOD HAZARD</b> | 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i> |
|                                    | Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>  |
|                                    | Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>  |
|                                    | Area with Flood Risk due to Levee <i>Zone D</i>  |
| <b>OTHER AREAS</b>                 | NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>   |
|                                    | Effective LOMRs  |
| <b>GENERAL STRUCTURES</b>          | Area of Undetermined Flood Hazard <i>Zone D</i>  |
|                                    | Channel, Culvert, or Storm Sewer   |
|                                    | Levee, Dike, or Floodwall  |
| <b>OTHER FEATURES</b>              | Cross Sections with 1% Annual Chance Water Surface Elevation <b>20.2</b>   |
|                                    | Cross Sections with 1% Annual Chance Water Surface Elevation <b>17.5</b>   |
|                                    | Coastal Transect   |
|                                    | Base Flood Elevation Line (BFE)  |
|                                    | Limit of Study   |
|                                    | Jurisdiction Boundary  |
|                                    | Coastal Transect Baseline  |
|                                    | Profile Baseline   |
|                                    | Hydrographic Feature   |
| <b>MAP PANELS</b>                  | Digital Data Available   |
|                                    | No Digital Data Available  |
|                                    | Unmapped   |



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

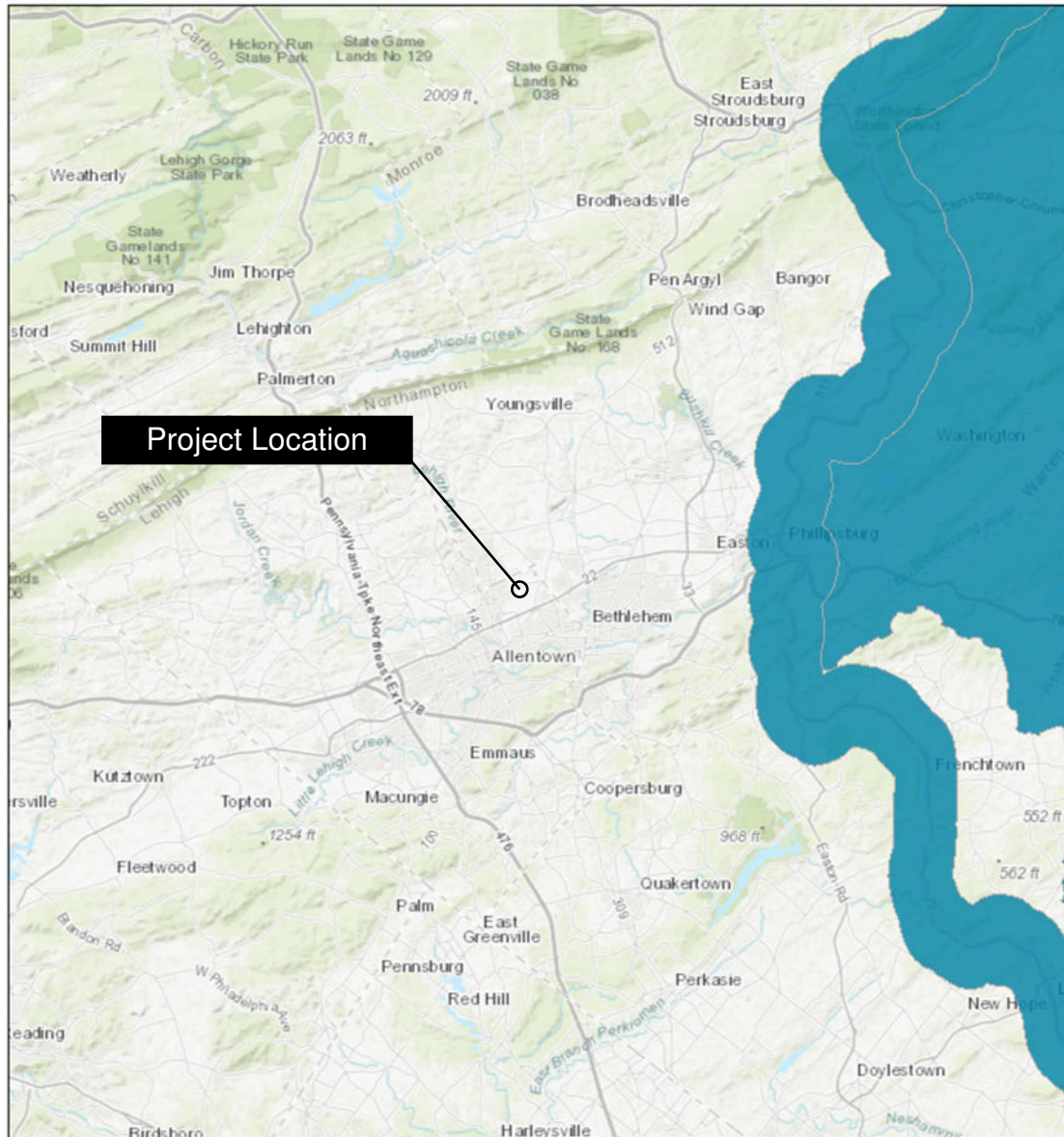
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **9/16/2022 at 11:49 AM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



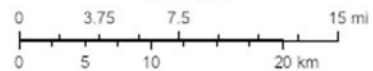
# ABE Corporate Hangar



September 13, 2022

 Sole Source Aquifers

1:577,791



## **Pre- Application Meeting Minutes**

Proposed Major Amendment #5, PAC 390061

North Side Cargo Area & Taxiway D Improvements

August 25, 2022

Participants: Ann Sellers, LCCD  
Holly Kaplan, LCCD  
Ryan Rockovits, LNAA  
Joe Civitella, MKA  
Christine Troxell, MKA

The meeting was held via the Zoom platform. Joe reviewed the current, overall NPDES boundary. Ann questioned if all of the work in the permit has been constructed. It was explained that due to FAA approvals and funding cycles, not all of the work has been completed. Holly asked if LNAA has any problems with getting vegetation established on the amended soils. Ryan responded that the Airport has a biologist who works onsite to manage vegetation to effectively control wildlife. LNAA has had success with using a mixture of ryegrass & tall fescue-the airport has been able to minimize growth of clover and other vegetation that attracts wildlife. It was also noted that the infiltration beds in the taxiway area have also been constructed.

The classification of the receiving waters was also reviewed. This amendment will add a new discharge point of interest. Runoff from a portion of the work area will now drain towards Race Street and Willowbrook Road, and eventually into an UNT to the Catasauqua Creek. It was noted that a portion of the Catasauqua Creek is classified as High Quality. Joe asked the district to confirm that, because there are no wetlands on this site that are impacted, this permit still qualifies as a general permit because we are not affecting wetlands connected to a high-quality stream. Holly indicated that she believes that the proposed work would still qualify as a general permit application, and indicated that she would verify this, and notify MKA if this was not the case.

It was noted that, typically many modifications to an NPDES permit are not desirable. However, the situation is different with the airport in that improvement projects and funding are ongoing. Therefore, LNAA will often need to amend the permit.

Joe discussed the anticipated E&S control measures for the proposed amendment, specifically the existing stormwater management basin to the east of the maintenance building. It was discussed that this basin treats much of the flow from the proposed work area in the new discharge point, however it would not be feasible to convert this permanent basin back into a sedimentation basin. As a result, MKA proposes to provide adequate E&S BMP's (as was provided for the existing basin along Race Street & Airport Road) upstream of the basin, which drains to discharge point #3. Holly indicated that this would be acceptable.

Because the proposed changes would be covered as an amendment to the existing permit that was issued on 11/6/2018, the amendment documents would be prepared using the “old forms” which permit the use of the rational method for calculating stormwater runoff rates. Holly indicated that she believes this is still acceptable, but noted she would confirm this with Garrett Cook, district engineer.

Ann noted concerns about the proposed amount of impervious and the potential for standing water in stormwater basins. Ryan concurred that this is a concern for LNAA. Joe responded that there are several areas with impervious coverage there now, so the increase in impervious area may not be as significant as they initially appear. Also, the proposed improvements will span at least two POI watersheds, with the majority of the runoff heading south into discharge point #3, in which additional infiltration areas for both rate and volume are anticipated to be utilized.

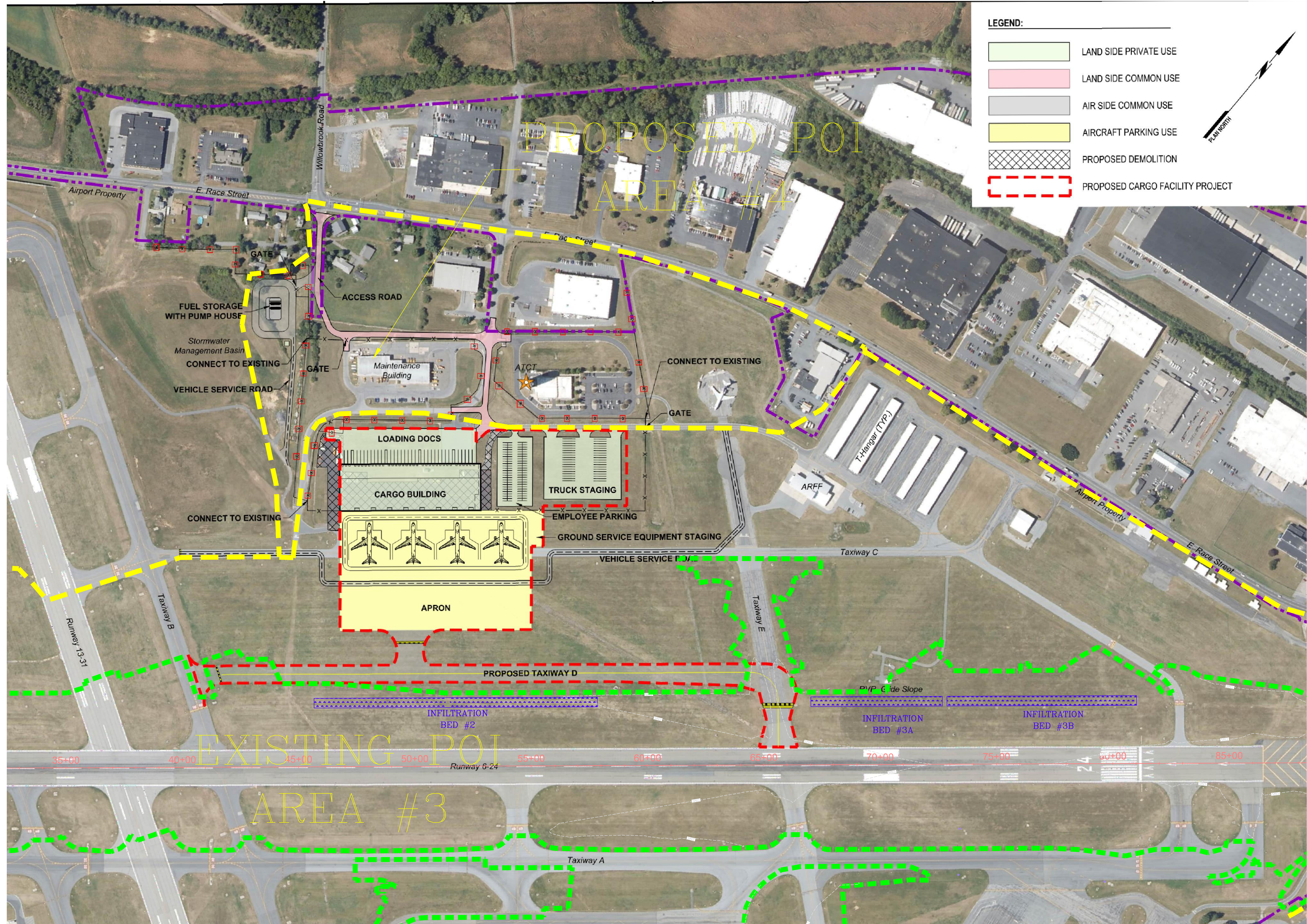
The design team and proposed permitting were reviewed. It was noted that LNAA will be working with different consultants on this project, and that MKA will be preparing the E&S and SWM plans for the overall project. Although separate land development plans will be prepared and approved, both projects will share one E&S plan and PCSM plan, which will be prepared by MKA.

In preparing for the next round of runway improvements, it was noted that there is a small area where LNAA proposes some additional operational improvements including straightening the Taxiway A centerline, removing the jog leading into these intersections, adding new shoulder on the runway side of Taxiway A, and demolishing extra pavement on the Hangar 3 side of Taxiway A. Overall, we anticipate that this work would have a net decrease in impervious coverage. It was also noted that this work is not included in the current permit area. This work is anticipated for construction in 2023. Joe noted that this could be included in Amendment #5. LCCD sees no issues with adding this area within Amendment #5. It was discussed that if for some reason the timing of all this work requires the Taxiway A ±2-acre increase in permit area needs to be constructed prior to Amendment #5 being approved, we would need to contact LCCD to see what alternatives could be utilized to permit this work.

The required fees for the forthcoming amendment were discussed. Holly requested that MKA provide her with the anticipated increase in the permit boundary and LOD, and that she would review and advise the team of how the review fees will be calculated. It was noted that currently, we are anticipating a submission at the end of November 2022.

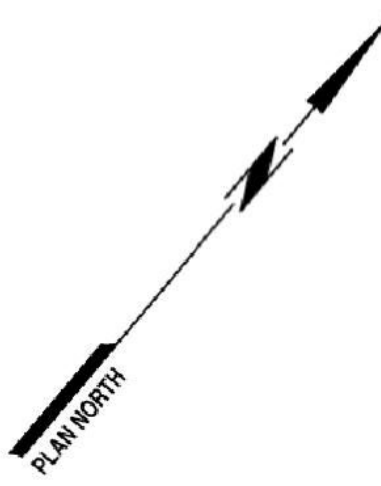
Enclosures:     Aerial plan with proposed sketch, watershed boundary (yellow) & current NPDES Area (Green)  
                    Aerial plan depicting current permit area and proposed paving changes to Taxiway A





**LEGEND:**

- LAND SIDE PRIVATE USE
- LAND SIDE COMMON USE
- AIR SIDE COMMON USE
- AIRCRAFT PARKING USE
- PROPOSED DEMOLITION
- PROPOSED CARGO FACILITY PROJECT

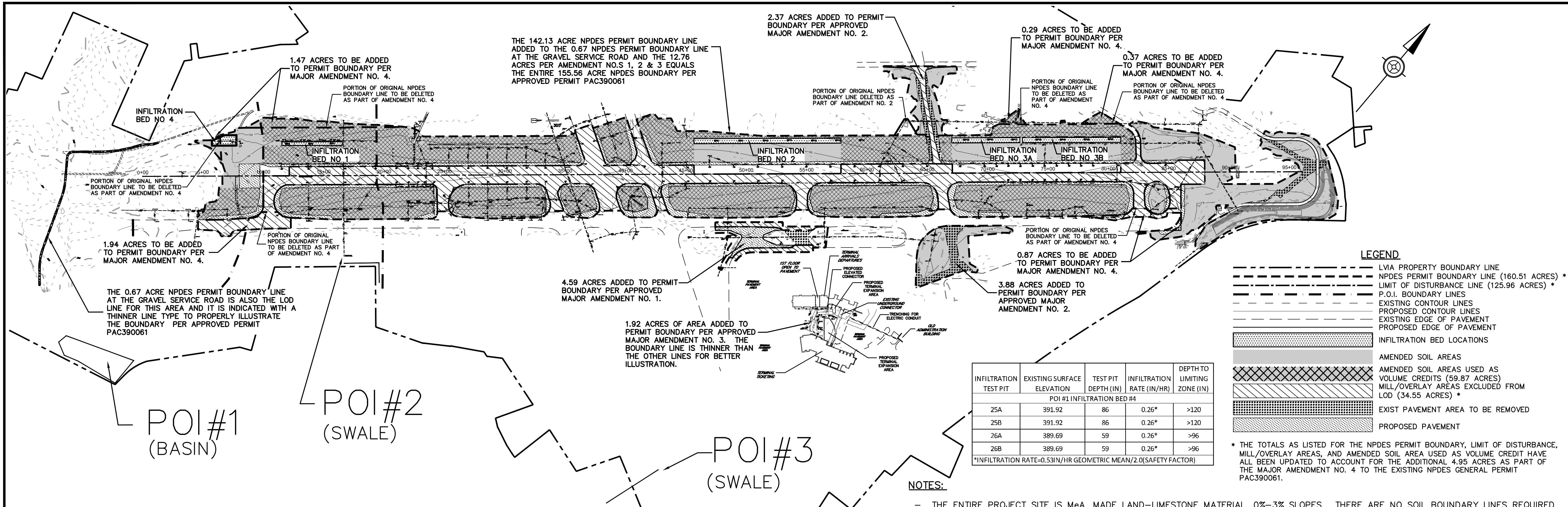


PROPOSED POI  
AREA #1

EXISTING POI  
AREA #3

Labels on the plan include: Willowbrook Road, E. Race Street, Airport Property, GATE, ACCESS ROAD, FUEL STORAGE WITH PUMP HOUSE, Stormwater Management Basin, CONNECT TO EXISTING, VEHICLE SERVICE ROAD, Maintenance Building, ATCT, TRUCK STAGING, EMPLOYEE PARKING, GROUND SERVICE EQUIPMENT STAGING, TAXIWAY E, TAXIWAY C, TAXIWAY B, TAXIWAY A, Runway 13-31, Runway 6-24, PVP Grade Slope, INFILTRATION BED #2, INFILTRATION BED #3A, INFILTRATION BED #3B, and various stationing markers (e.g., 35+00, 40+00, 45+00, 50+00, 55+00, 60+00, 65+00, 70+00, 75+00, 80+00, 85+00).

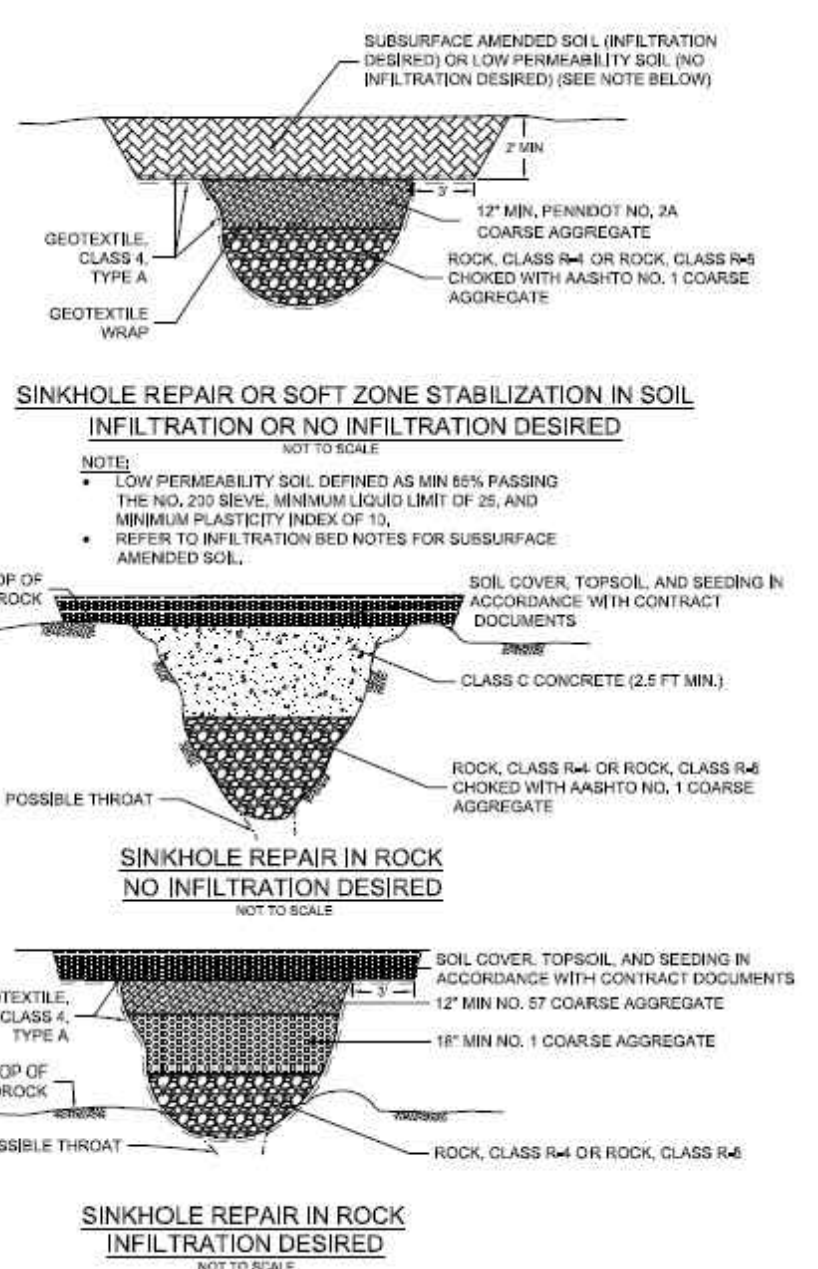
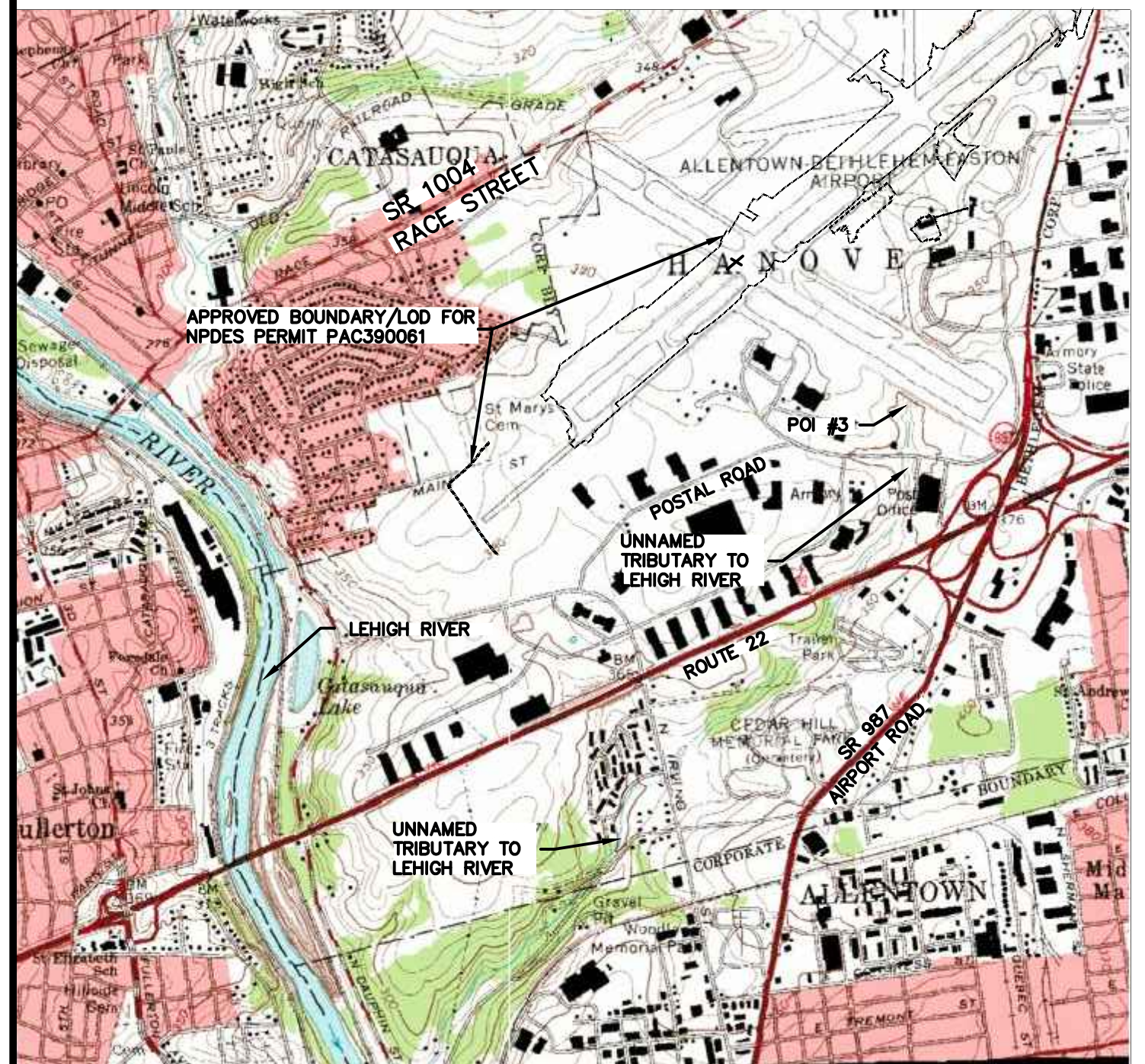




INFILTRATION TEST PIT	EXISTING SURFACE ELEVATION	TEST PIT DEPTH (IN)	INFILTRATION RATE (IN/HR)	DEPTH TO LIMITING ZONE (IN)
POI #1 INFILTRATION BED #4				
25A	391.92	86	0.26*	>120
25B	391.92	86	0.26*	>120
26A	389.69	59	0.26*	>96
26B	389.69	59	0.26*	>96

\*INFILTRATION RATE=0.53IN/HR GEOMETRIC MEAN/2.0(SAFETY FACTOR)

- NOTES:
- THE ENTIRE PROJECT SITE IS MeA, MADE LAND-LIMESTONE MATERIAL, 0%-3% SLOPES. THERE ARE NO SOIL BOUNDARY LINES REQUIRED TO BE INDICATED ON THIS PLAN.
  - REFER TO PCSM SUPPLEMENT SHEET 1 OF 6 FOR UPDATED OVERALL NPDES PERMIT BOUNDARY/LIMIT OF DISTURBANCE LINE AS PER MAJOR AMENDMENT NO. 4 TO PAC390061.
  - REFER TO PCSM PLAN SHEET 1 THRU 6 OF 6, AS APPROVED UNDER PAC390061, AND THE ASSOCIATED PLANS FOR PAST AMENDMENTS 1, 2, & 3 FOR ALL PCSM NOTES AND DETAILS AS THESE PLANS AS PROVIDED FOR AMENDMENT NO 4 ARE SOLELY FOR ILLUSTRATING THE AMENDMENT NO.4 ADDITIONS TO THE PERMIT.
  - A LEGEND FOR ALL PLAN VIEWS IS LOCATED ON SUPPLEMENTAL PLAN SHEET 2 OF 6 ONLY.



LIMITATIONS	RESOLUTIONS
FROST HEAVE/POOR WINTER GRADING (MeA)	LIMIT DATES OF EARTHMOVING OBTAIN FILL MATERIAL FROM OTHER AREA OF SITE, OBTAIN FILL MATERIAL FROM AN OFF-SITE LOCATION.
SINKHOLE PRONE SOIL (MeA)	MITIGATE SINKHOLE (SEE DETAIL) AVOID IMPACT TO THOSE AREAS
POOR TOPSOIL SOURCE (MeA)	OBTAIN TOPSOIL MATERIAL FROM OTHER AREA OF SITE, OBTAIN TOPSOIL MATERIAL FROM AN OFF-SITE LOCATION, AMEND SITE TOPSOIL TO INCREASE ORGANIC COMPONENTS AND NUTRIENTS, SELECT APPROPRIATE SEED MIXTURE.

**SOIL DESCRIPTIONS**

MeA, MADE LAND-LIMESTONE MATERIAL, 0%-3% SLOPES. IS SOIL MATERIAL, GLACIAL TILL, AND LIMESTONE THAT EXTEND TO VARYING DEPTHS AND THAT HAVE BEEN ARTIFICIALLY DISTURBED. THESE AREAS RANGE FROM EXPOSED BEDROCK TO DEEP FILL. DEPTH TO BEDROCK AND HIGH WATER TABLE IN THIS AREA IS VARIABLE. THE DRAINAGE CLASS IS VARIED. THE SHRINK-SWELL POTENTIAL IS LOW. THIS SOIL IS NOT FLOODED OR PONDED. THERE ZONE OF WATER SATURATION IS VARIABLE. THIS SOIL DOES NOT MEET HYDRIC CRITERIA.

SYMBOL	DESCRIPTION	SOIL GROUP	HYDRIC SOIL OR COMPONENT	DEPTH TO SEASONALLY HIGH WATER TABLE (IN)	DEPTH TO BEDROCK (IN)	SINKHOLE POTENTIAL	FROST ACTION	TOPSOIL SOURCE	ROAD FILL
MeA	MADE LAND, LIMESTONE MATERIAL, 0-3% SLOPES	C	NO	VARIABLE	VARIABLE	HIGH	LOW	POOR	GOOD

**PCSM PLAN NOTE**

THIS PLAN IS SUPPLEMENT PCSM PLAN SHEET 1 OF 6, CREATED AS PART OF MAJOR AMENDMENT NO. 4 TO NPDES GENERAL PERMIT PAC390061 AS APPROVED FOR PACKAGE 1: RUNWAY INTERSECTION REHABILITATION AND SAFETY AREA RESTORATION, INCLUDING THE ALREADY APPROVED NPDES AMENDMENT NOS 1, 2, & 3, AND IS SOLELY FOR ILLUSTRATING THE 11+ ACRES OF PAVEMENT ADDITIONS TO THE PROJECT ALONG RUNWAY 6/24 & ASSOCIATED TAXIWAYS, THE ADDING OF AN ADDITIONAL 4.95 ACRES OF LAND TO THE EXISTING PERMIT BOUNDARY FOR INFILTRATION BED #4 AND MILL/OVERLAY AREAS TO TAXIWAY A. REFER TO THE APPROVED PERMIT PLANS, AND PRIOR AMENDMENT PLANS FOR ALL OTHER INFORMATION.

AN ADDITIONAL STORMWATER BMP, INFILTRATION BED #4, LOCATED IN POI #1, IS PROPOSED AS PART OF AMENDMENT NO. 4. SEE SUPPLEMENTAL PLAN SHEET 6 FOR DETAILS. NO OTHER NEW BMP'S ARE REQUIRED AS PART OF THIS AMENDMENT.

**OWNER-RESPONSIBLE PARTY:**  
 LEHIGH NORTHAMPTON AIRPORT AUTHORITY  
 3311 AIRPORT ROAD  
 ALLENTOWN, PA 18109  
 PHONE (610) 231-5230  
 ATTN: RYAN MEYER

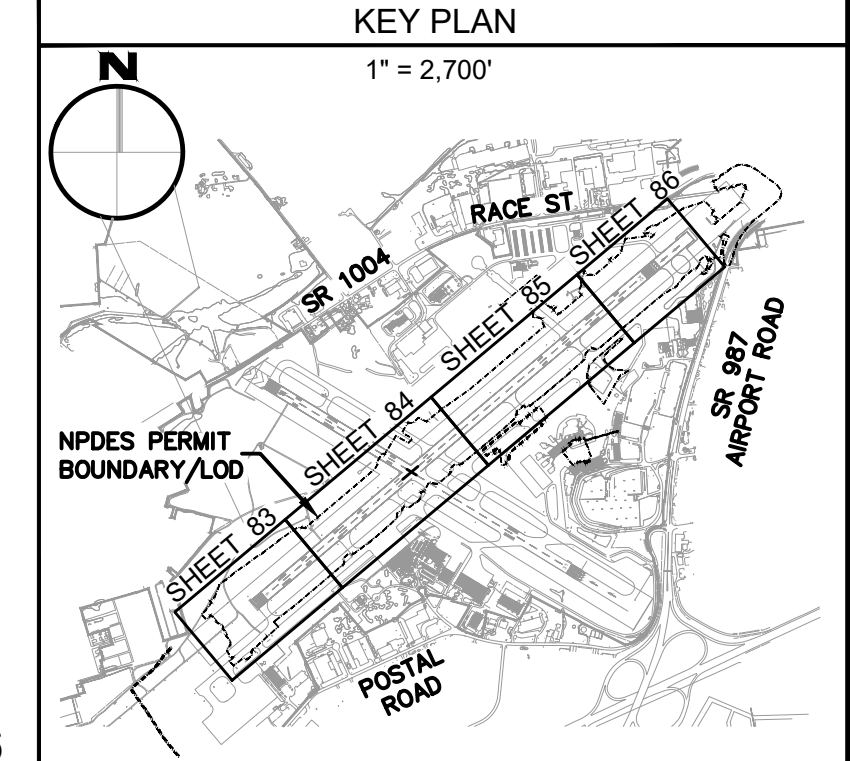
**CHAPTER 93 STREAM CLASSIFICATION**  
 LEHIGH RIVER AND ITS UN-NAMED TRIBUTARIES ARE DESIGNATED AS A COLD WATER FISHERY (CWF) WITH MIGRATORY FISHES (MF) AS PER PA CODE TITLE 25, CHAPTER 93.

**STREAM IMPAIRMENT**  
 THE LEHIGH RIVER AND ITS UN-NAMED TRIBUTARIES ARE LISTED AS BEING IMPAIRED. THE CAUSE OF SAID IMPAIRMENT IS "URBAN RUNOFF/STORM SEWERS - SILTATION". THERE IS NO ESTABLISHED TMDL THAT APPLIES.

Hanover Township, Lehigh Co  
 Serial No's. 20172580917,  
 20172582066

CALL BEFORE YOU DIG!  
 PENNSYLVANIA LAW REQUIRES  
 3 WORKING DAYS NOTICE FOR  
 CONSTRUCTION PHASE AND 10 WORKING  
 DAYS IN DESIGN STAGE - STOP CALL  
 Pennsylvania One Call System, Inc.

1.800.242.1776

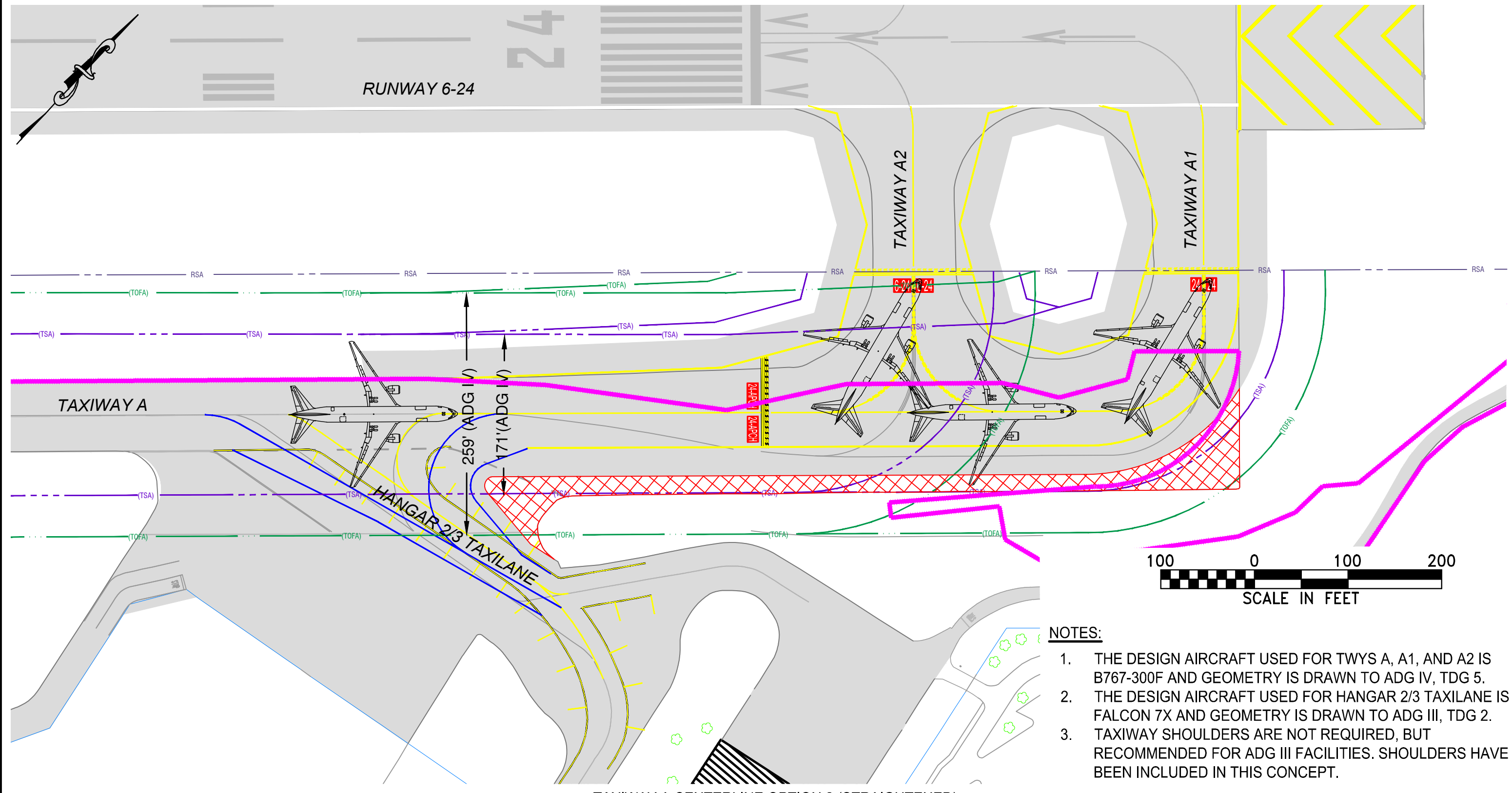


MAJOR AMENDMENT NO. 4 - SUPPLEMENTAL PLAN SHEET 1 OF 6

CONSULTANT: Arora Engineers, Inc. 61 Wilmington-West Chester Pike Chadds Ford, PA 19317 P (610) 459-7900   F (610) 459-7950   aroraengineers.com	SEAL: 	PROFESSIONAL CERTIFICATION: DESIGNED: J.V.C. DRAWN: M.V.B. CHECKED: J.V.C. APPROVED: C.M.T.	REVISION NO.   REVISION DATE   DESCRIPTION 08-05-2022   CONFORMED DOCUMENTS		PROJECT TITLE: PACKAGE 5: RUNWAY SHOULDER CONSTRUCTION AND TAXIWAY GEOMETRY IMPROVEMENTS SHEET TITLE: POST CONSTRUCTION STORMWATER MANAGEMENT PLAN MAJOR AMENDMENT NO. 4 - SUPPLEMENTAL PLAN 1 SCALE: AS SHOWN   DATE: MARCH 4, 2022	ABE NO.: LNAA-CO-22-001 AIP PROJECT No.: 3-42-0001-117-2022 SHEET NO.: CV55.00 82 OF 185
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FILE NAME: P:\Airport\ABE\PROJECTS\2016-760A\CAD\Package 5\EXHIBITS\Taxiway A Centerline Options Exhibit.dwg LAYOUT NAME: EX-2 USER: BSuarez PLOTTED: Tuesday, July 12, 2022 - 1:23pm



**NOTES:**

1. THE DESIGN AIRCRAFT USED FOR TWYS A, A1, AND A2 IS B767-300F AND GEOMETRY IS DRAWN TO ADG IV, TDG 5.
2. THE DESIGN AIRCRAFT USED FOR HANGAR 2/3 TAXILANE IS FALCON 7X AND GEOMETRY IS DRAWN TO ADG III, TDG 2.
3. TAXIWAY SHOULDERS ARE NOT REQUIRED, BUT RECOMMENDED FOR ADG III FACILITIES. SHOULDERS HAVE BEEN INCLUDED IN THIS CONCEPT.

**LEGEND:**

EXISTING MARKING	PROPOSED MARKING	(TSA) TAXIWAY SAFETY AREA (ADG IV)	(TOFA) TAXIWAY OBJECT FREE AREA (ADG IV)	RSA RUNWAY SAFETY AREA	CONCEPTUAL HANGAR 2/3 TAXILANE MARKING	PAVEMENT DEMOLITION (2,365 SY)
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**ARORA**  
 Arora Engineers, Inc.  
 1600 Market Street  
 Suite 1630  
 Philadelphia, PA 19103  
 P (215) 564-4677 | F (215) 564-4678 | aroraengineers.com

**ADCI**  
 AIRPORT DESIGN CONSULTANTS  
 1880 JFK BOULEVARD  
 SUITE 1140  
 PHILADELPHIA, PA 19103  
 PHONE: 410.465.9600  
 FAX: 410.465.9602

Designed By: SV  
 Drafted By: SV  
 Checked By: RES  
 Approved By: CAJ

## RUNWAY 6-24 REHABILITATION PROGRAM

Lehigh Northampton Airport Authority



Lehigh Valley International Airport  
 Allentown, Pennsylvania

**TAXIWAY A CENTERLINE OPTION 2**

Scale: AS SHOWN      Date: MARCH 2022

Federal Project No. \_\_\_\_\_  
 Sheet No. EX-2