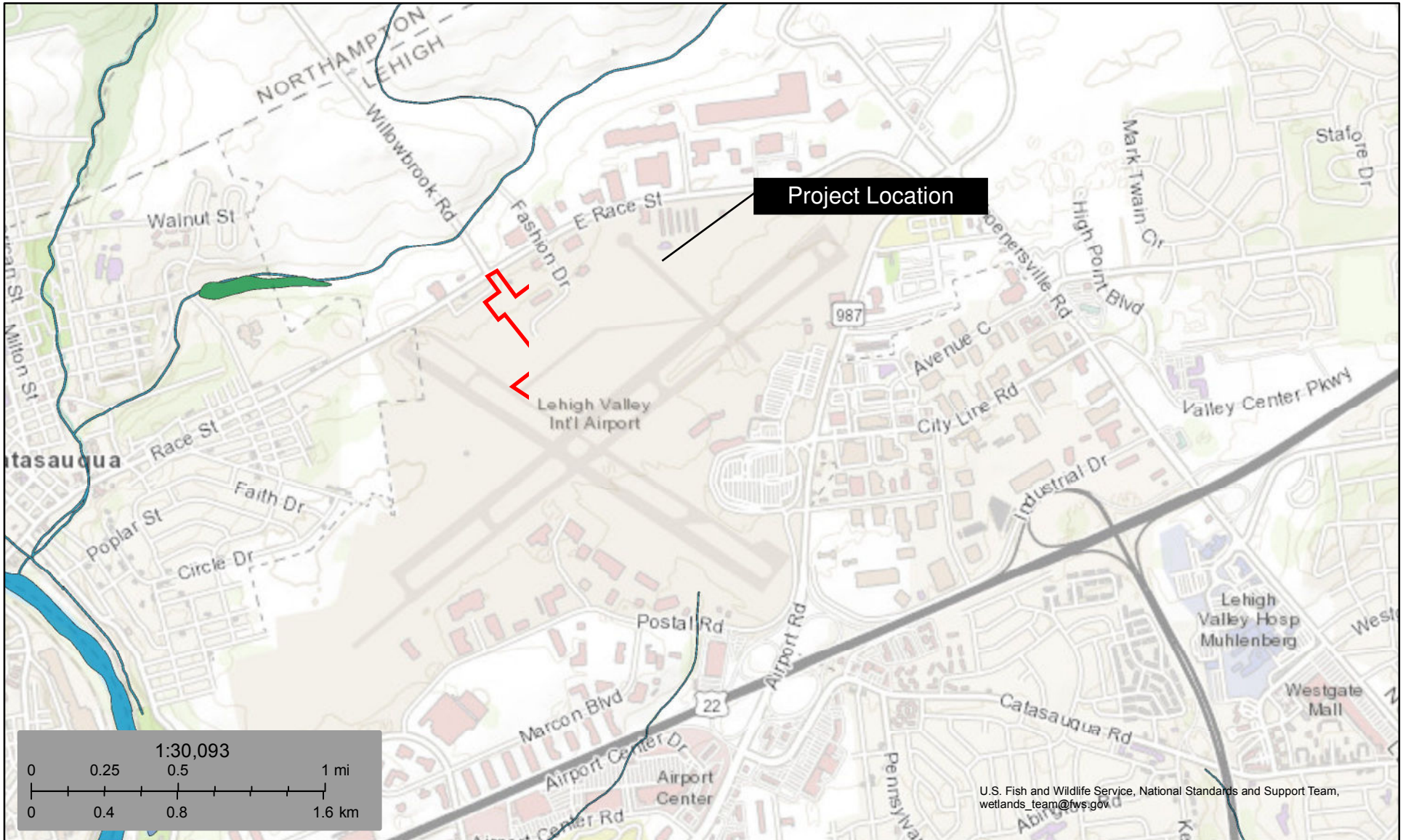


Appendix J

Water Resources



August 12, 2022

Wetlands

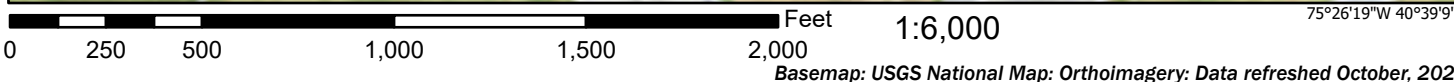
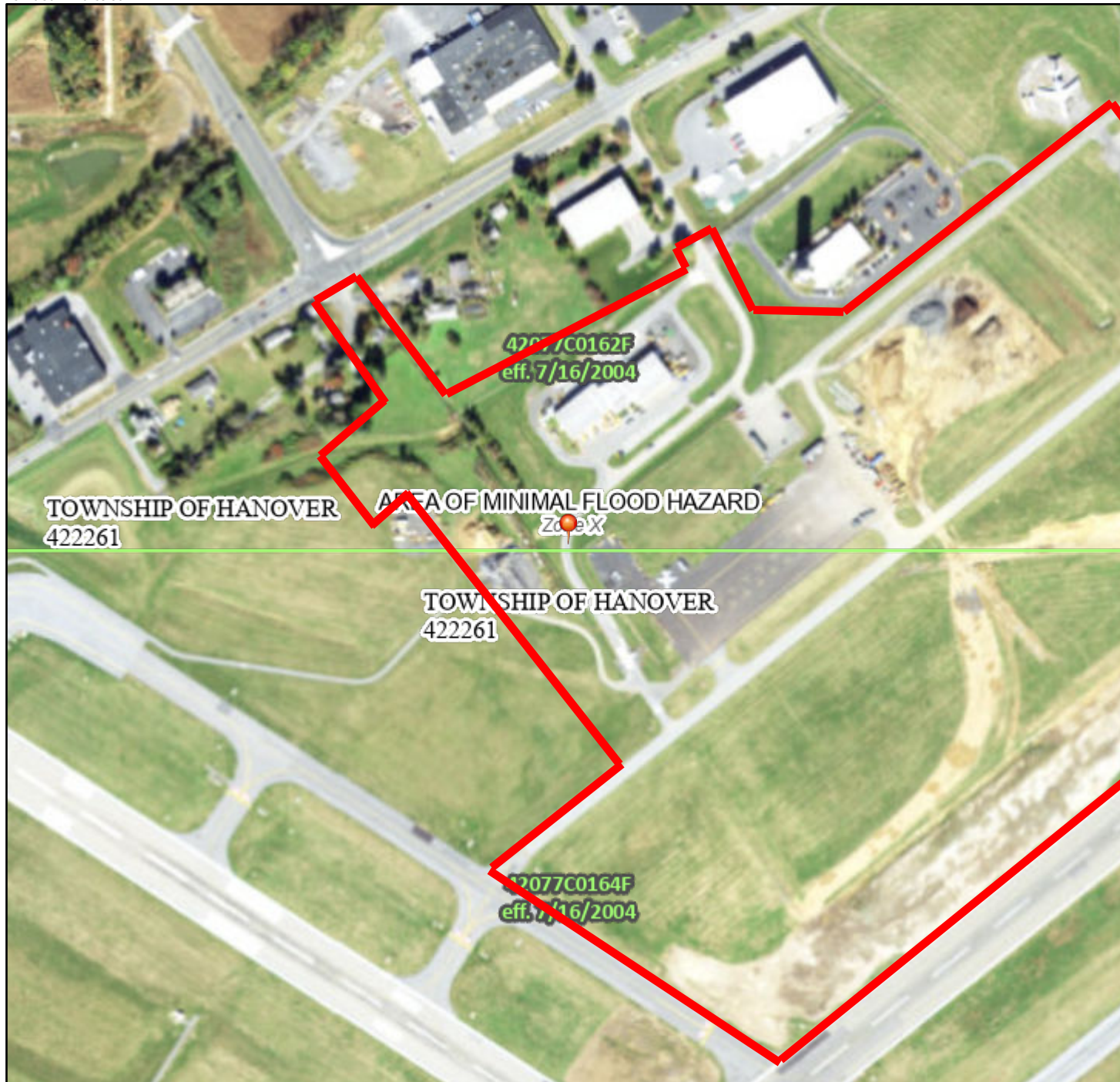
- | | | | | | |
|---|--------------------------------|---|-----------------------------------|---|----------|
|  | Estuarine and Marine Deepwater |  | Freshwater Emergent Wetland |  | Lake |
|  | Estuarine and Marine Wetland |  | Freshwater Forested/Shrub Wetland |  | Other |
| | |  | Freshwater Pond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

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD		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 Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D

OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall

OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline

MAP PANELS		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.

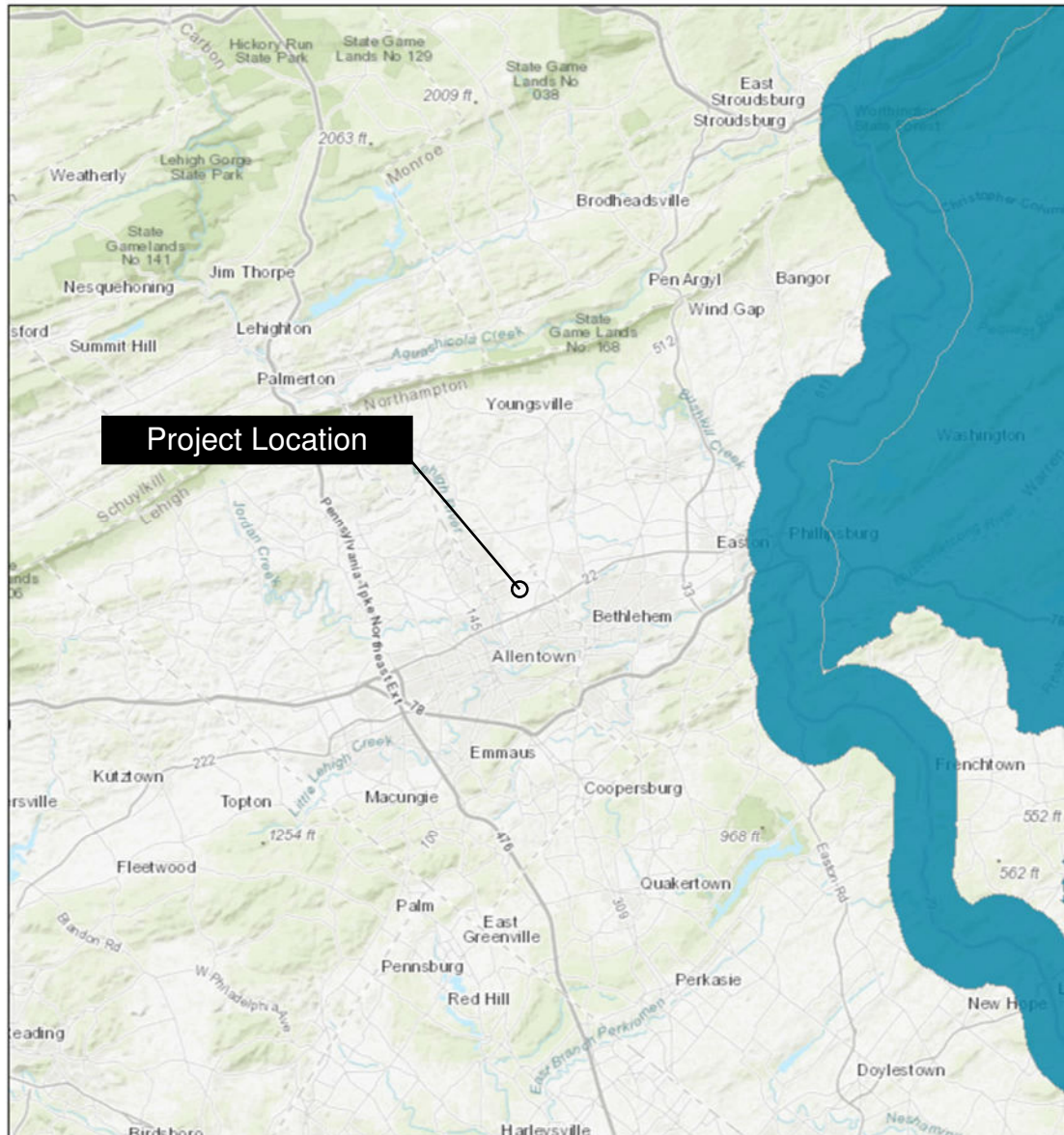
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

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.



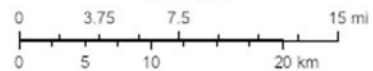
ABE Corporate Hangar



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.

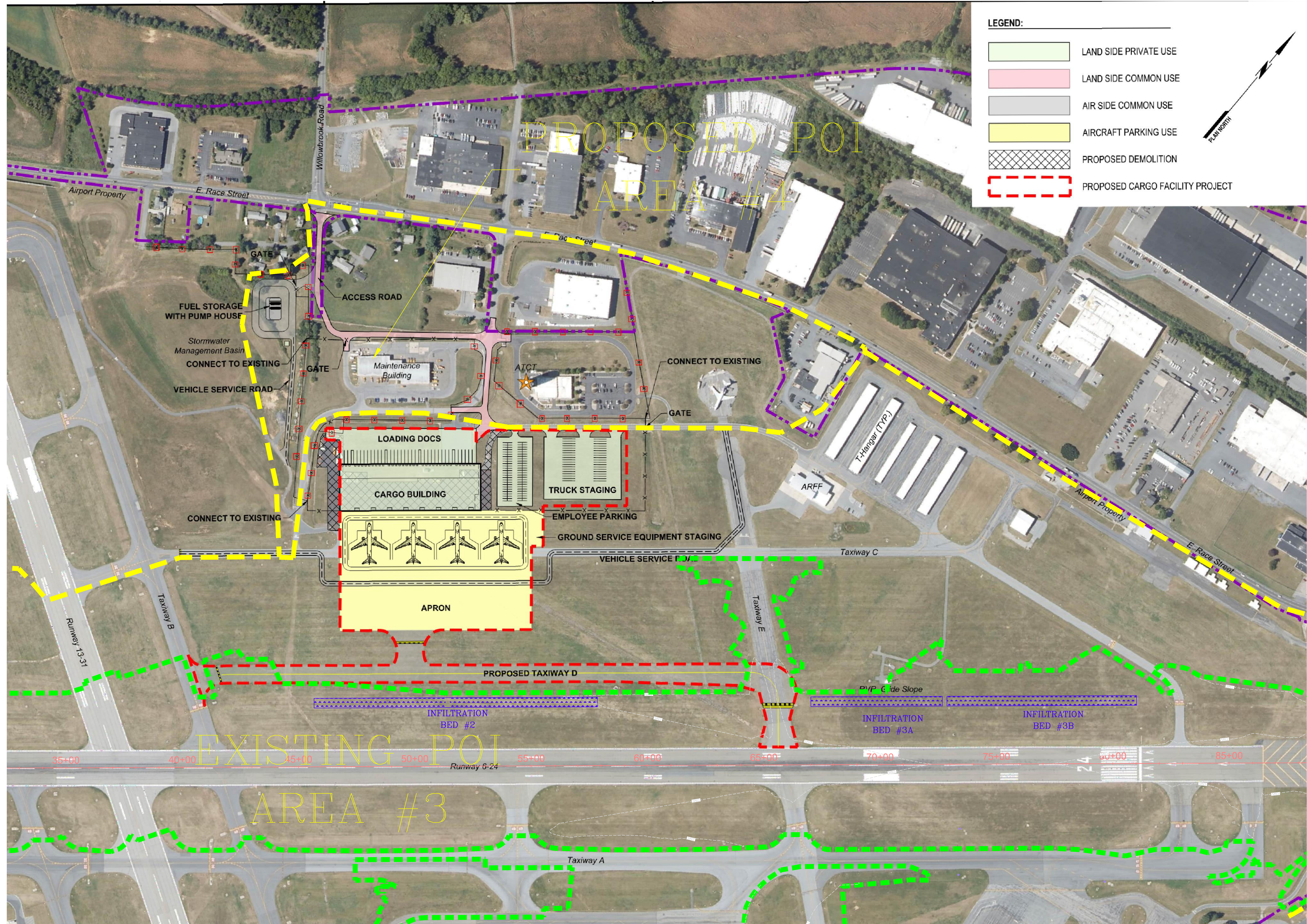
Ann noted concerns about the proposed amount of impervious and the potential for standing water in stormwater basins. Ryan concurred that this is a concern for LNAA. Joe responded that there are several areas with impervious coverage there now, so the increase in impervious area may not be as significant 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.

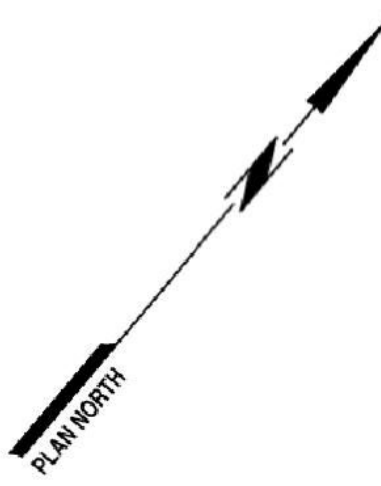
The required fees for the forthcoming amendment were discussed. Holly requested that MKA provide her with the anticipated increase in the permit boundary and LOD, and that she would review and advise the team of how the review fees will be calculated. It was noted that currently, we are anticipating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

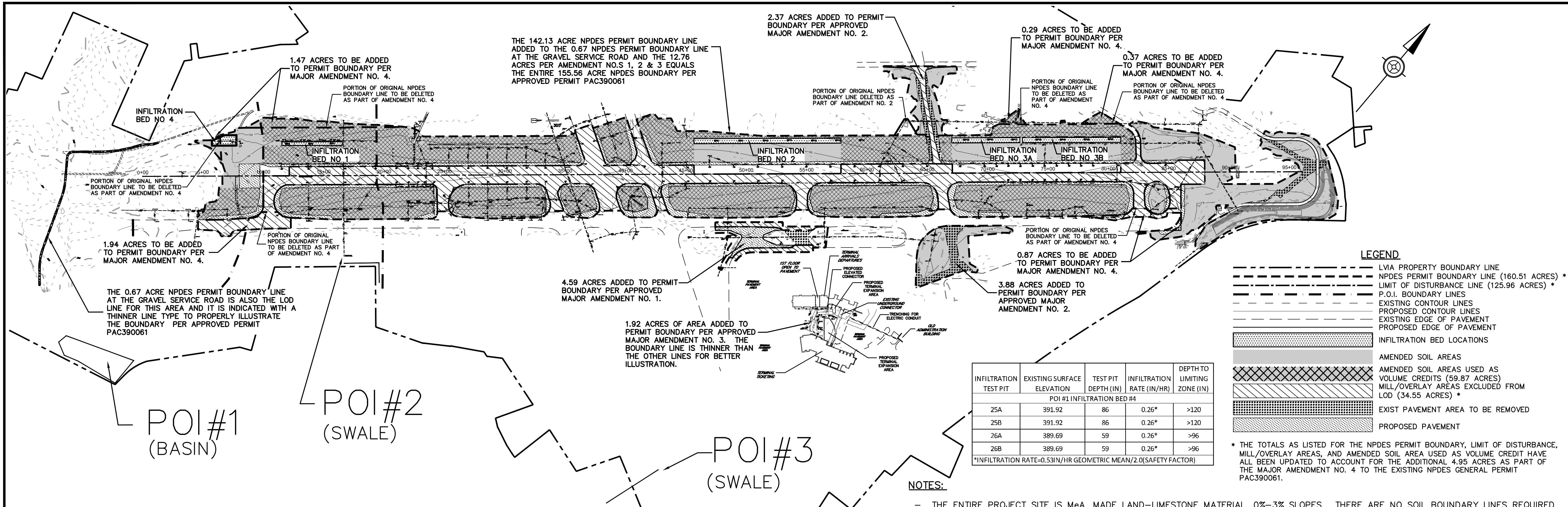
- LAND SIDE PRIVATE USE
- LAND SIDE COMMON USE
- AIR SIDE COMMON USE
- AIRCRAFT PARKING USE
- PROPOSED DEMOLITION
- PROPOSED CARGO FACILITY PROJECT



PROPOSED POI
AREA #1

EXISTING POI
AREA #3

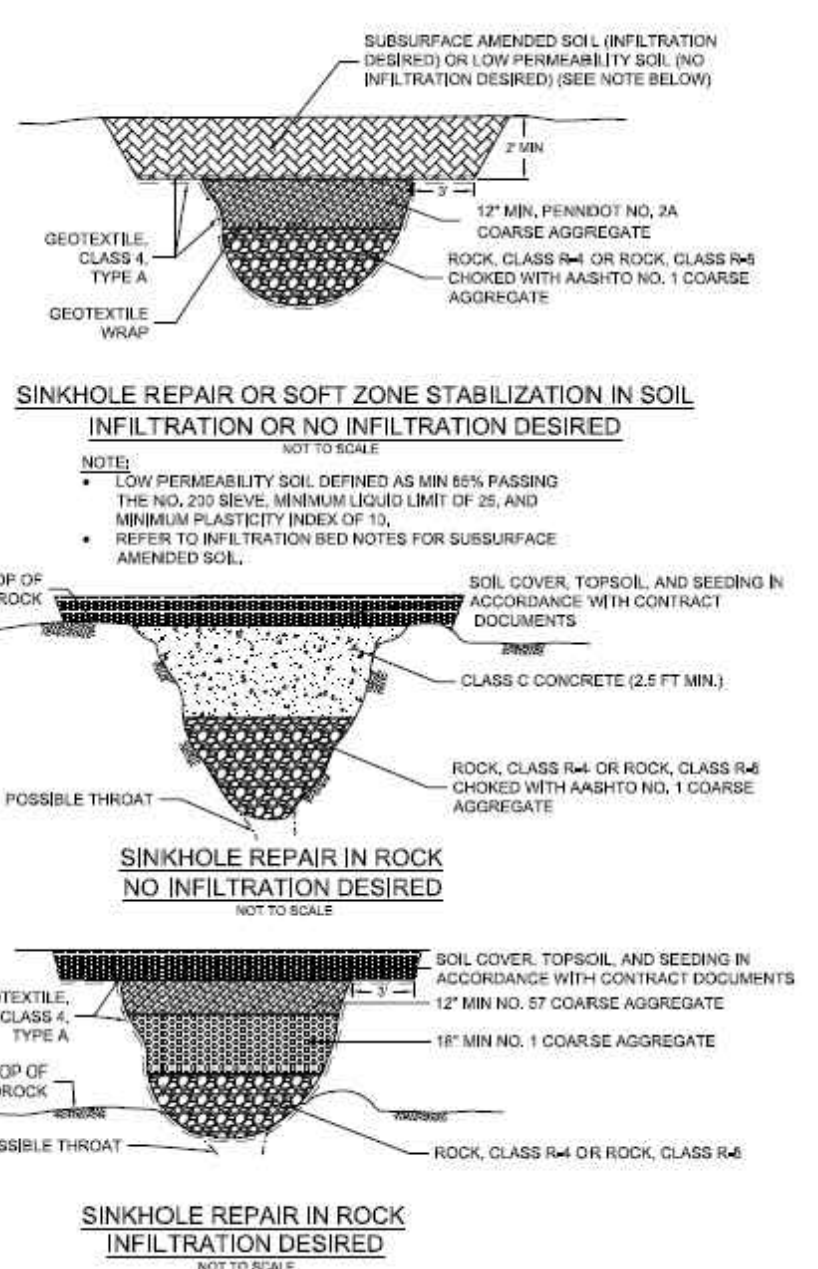
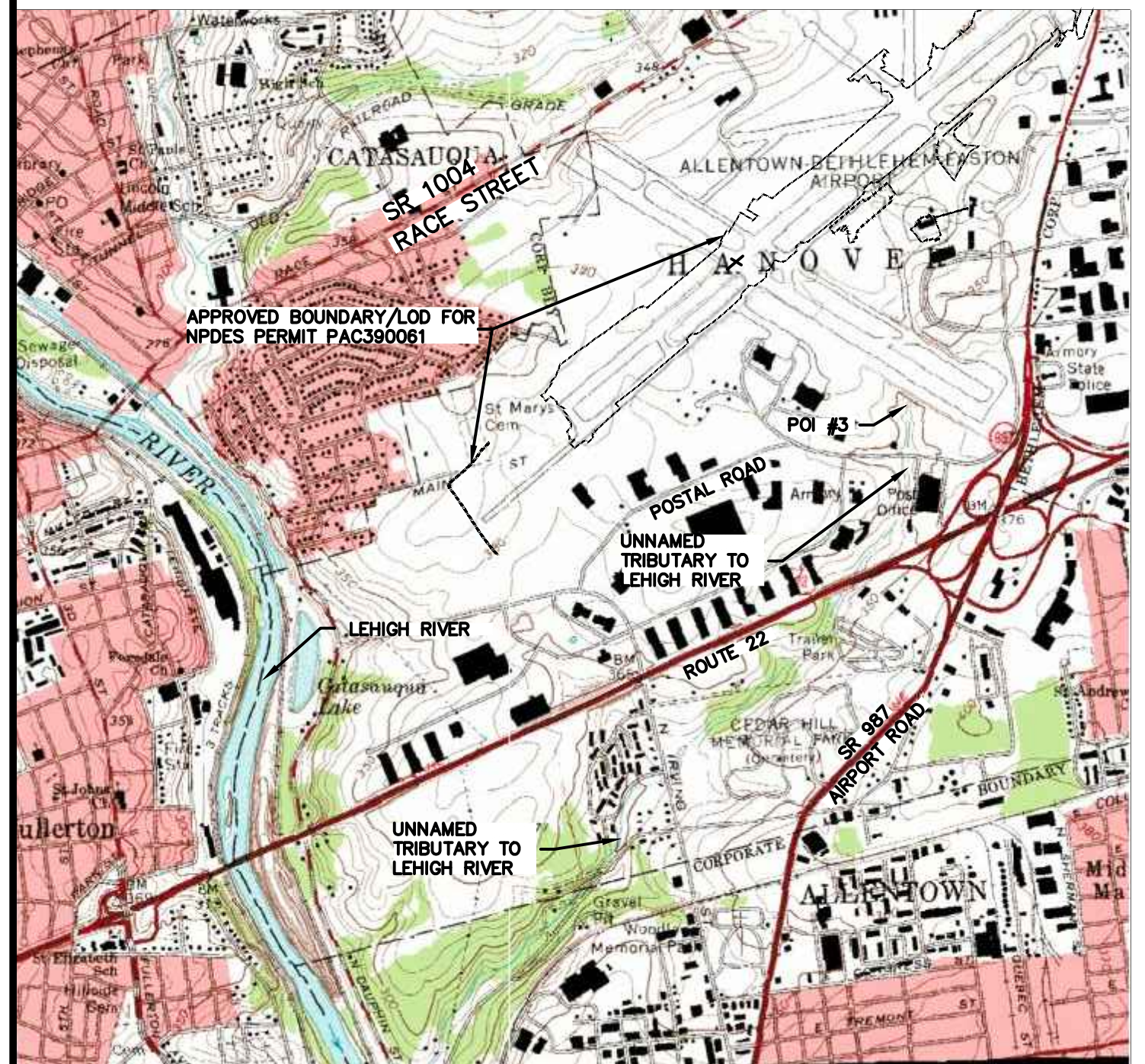
35+00 40+00 45+00 50+00 55+00 60+00 65+00 70+00 75+00 80+00 85+00



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.

SOILS CLASSIFICATIONS

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 N.O.S 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 ASSOCIATED 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

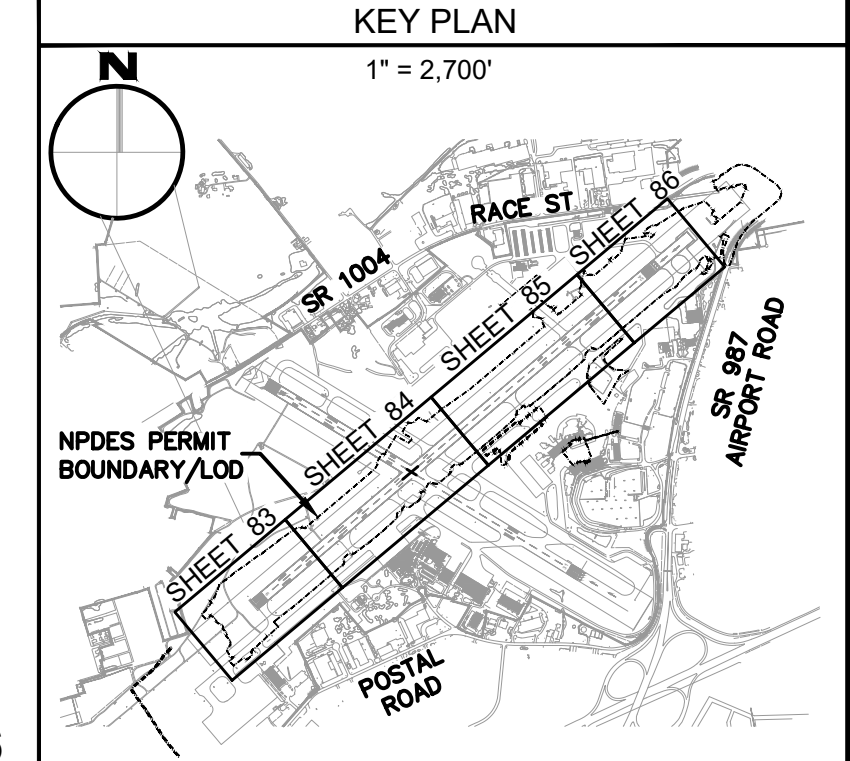
CHAPTER 93 STREAM CLASSIFICATION
LEHIGH RIVER AND ITS UN-NAMED TRIBUTARIES ARE DESIGNATED AS A COLD WATER FISHERY (CWF) WITH MIGRATORY FISHES (MF) AS PER PA CODE TITLE 25, CHAPTER 93.

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
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ARORA Engineers, Inc.
61 Wilmington-West Chester Pike
Chadds Ford, PA 19317
P (610) 459-7900 | F (610) 459-7950 | aroraengineers.com

SEAL:
CHRISTOPHER TROVELL
ENGINEER
No. 05591-E

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

BID DOCUMENTS

LEHIGH VALLEY INTERNATIONAL AIRPORT
ALLENTOWN, PENNSYLVANIA

ABE

RUNWAY 6-24 REHABILITATION

PROJECT TITLE:
PACKAGE 5: RUNWAY SHOULDER CONSTRUCTION AND TAXIWAY GEOMETRY IMPROVEMENTS

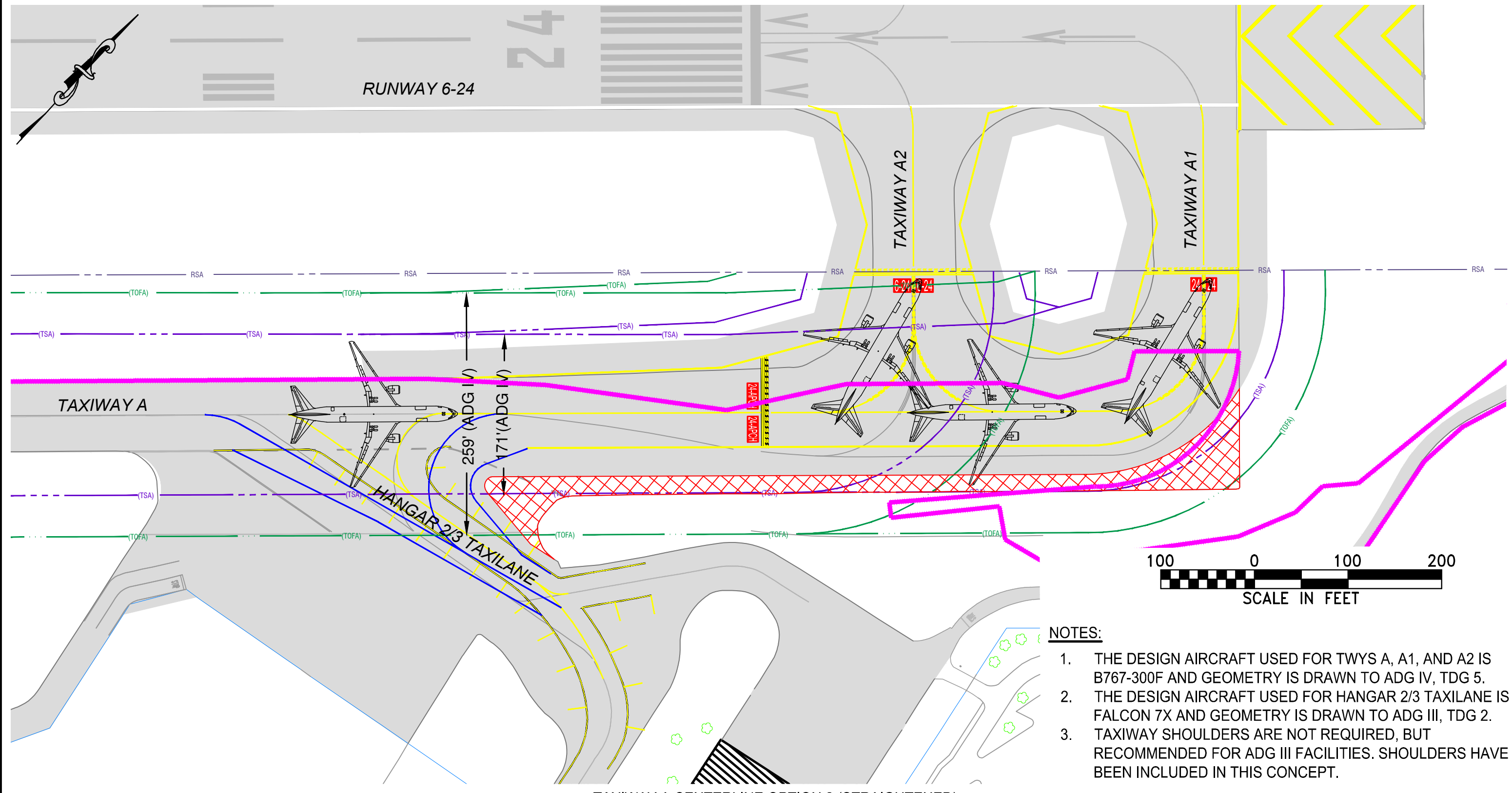
SHEET TITLE:
POST CONSTRUCTION STORMWATER MANAGEMENT PLAN MAJOR AMENDMENT NO. 4 - SUPPLEMENT PLAN 1

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

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)
------------------	------------------	------------------------------------	--	------------------------	--	--------------------------------

<p>Arora Engineers, Inc. 1600 Market Street Suite 1630 Philadelphia, PA 19103 P (215) 564-4677 F (215) 564-4678 aroraengineers.com</p>	Designed By: SV	<h2>RUNWAY 6-24 REHABILITATION PROGRAM</h2> <p>Lehigh Northampton Airport Authority</p>		Lehigh Valley International Airport Allentown, Pennsylvania		Federal Project No.
	Drafted By: SV			<h3>TAXIWAY A CENTERLINE OPTION 2</h3>		Sheet No.
<p>AIRPORT DESIGN CONSULTANTS 1880 JFK BOULEVARD SUITE 1140 PHILADELPHIA, PA 19103 PHONE: 410.465.9600 FAX: 410.465.9602</p>	Checked By: RES	Lehigh Northampton Airport Authority		Scale: AS SHOWN	Date: MARCH 2022	EX-2
	Approved By: CAJ					