

PROPOSED CAPITAL IMPROVEMENT PLAN

NOTICE OF PROJECT CHANGE / DRAFT ENVIRONMENTAL IMPACT REPORT / ENVIRONMENTAL ASSESSMENT

EEA File Number: 15964



Prepared For:

Martha's Vineyard Airport
71 Airport Road
West Tisbury, MA 02575

January 15, 2021



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EXECUTIVE SUMMARY

Project and Location

The proposed project is the Martha's Vineyard Airport Capital Improvement Plan. The project is located in the towns of West Tisbury and Edgartown, Massachusetts. Work is proposed primarily on airport property, but also on adjacent easements held by the airport and potentially on adjacent roads, road rights-of-way, and Manuel F. Correllus State Forest land.

Project Description

The Proposed Action is summarized below in **Table ES-1**. Each element or project of the Proposed Action is described in detail below.

Table ES-1 Proposed Projects

Construction Year	Project	Preferred Alternative	Description	Total Cost ¹
2021	Business Park Lots 34 and 38	1	Obtain approvals for previously developed Business Park lots; 1.2 acres impervious surface in Priority Habitat	NA
2022	Improve Fuel Farm Access and Safety	3	Convert gravel fuel farm pad to pavement and pave gravel access road, replace oil water separator	\$830,000
2022	Aircraft Hangar Development	2	Construct two new hangars; 1.0 acre new impervious in Priority Habitat	\$6.7 million
2023	Airspace Vegetation Management, Runway 6-24	4A, 4B	Remove vegetation obstructions. Including Runway 15-33, would be 32.9 acres, 29.7 on airport or easements, 3.2 acres in State Forest/no easement	\$1.3 million
2023	Runway 15-33 and Taxiway E Reconstruction, and Vegetation Management	5-5	Reconstruct runway and taxiway, remove shoulders, displace Runway 15 threshold 275'; extend and reconfigure taxiway; net removal of 6 acres impervious	\$10.4 million

Construction Year	Project	Preferred Alternative	Description	Total Cost¹
2028	Terminal Building Renovation	7-1A	Construct miscellaneous terminal building improvements, mainly within existing terminal use areas	\$16.9 million
2029	Aircraft Parking and Movement Areas	9-2B, 9-3	Construct new stub taxiway to Southeast Ramp; remove four buildings and expand apron area within Southwest Ramp	\$5.3 million
2030	Access Road Improvements	8-1	Construct a right-turn lane on Airport Road exiting Airport	\$608,000

Business Park Lots 34 and 38

The project was not included in the Environmental Notification Form (ENF) and was added when it was learned the lots did not previously go through the MEPA process. This project includes two lots within the Martha's Vineyard Airport (the Airport) Business Park. This land has been developed and leased for non-aviation commercial activities such as light industry, storage, service, and trades. This commercial space provides needed revenue for the Airport and adds to the Island's economic vitality without detracting from the viability of other business areas.

Lot 34 is 0.77 acre and was previously cleared of vegetation in preparation for development. Lot 38 is 0.43 acre has previously been developed. Both lots are within Priority Habitat of Rare Species. The preferred alternative is for Lot 38 to remain in its current state of development and business use and to permit Lot 34 to be developed for commercial use in the future.

Aircraft Hangar Development

This project was shown as one new hangar in the ENF, and currently two new hangars are proposed.

Current hangar demand exceeds adequate available hangar space at the Airport, and the Airport is required by the FAA to generate income to support the maintenance and upkeep of the facility. The Airport has current demand from a potential new tenant and future demand is anticipated.

The preferred alternative would allow for the construction of two hangars approximately 9,200 square feet and 15,234 square feet in size plus approximately 25 total vehicle parking spaces. This alternative would require the conversion of 1.0 acres of existing vegetated land that is Priority Habitat to impervious surface and require that 0.7 acre of vegetated land, also Priority Habitat, be disturbed to construct stormwater basins and associated grading. The overall project cost, including design, construction and contingencies, of this alternative is \$6.7 million.

Improve Fuel Farm Access and Safety

The Airport's existing fuel farm and its access road have crushed asphalt that is a source of foreign object debris (FOD) on the aprons and possibly the runways. FOD may cause damage to aircraft landing gear, propellers, and jet engines and is a recognized safety hazard. The Airport proposes to pave the access road and fuel farm area to reduce maintenance costs and keep FOD off the apron areas and runways. This alternative will also include the replacement of the existing oil-water separator with a unit designed to meet the current MassDEP stormwater standards for land use with higher potential pollution loads (LUHPPL). This alternative would not expand the existing footprint of the facility and have little impact on adjacent habitat. This alternative has a construction estimate of \$830,000.

Airspace Vegetation Management

The project was not included in the ENF and was added when the Airport determined that vegetation had grown into airspace that is supposed to be kept clear for safe movement of aircraft. Clear approaches are a critical safety concern, and the FAA has regulations and requirements for the protection of airspace and the safety of air navigation by keeping the approaches to runways clear of both natural and manmade objects ("obstructions"). Obstructions are determined by surveying the height of obstructions and comparing them with the FAA defined requirements. If the approach surfaces are not clear, then due to the hazards, FAA can restrict the use and utility of the runway for aircraft.

There are currently trees and shrubs causing obstructions within the airspace located off all four runway ends. The vegetation itself is located on Airport property, off Airport property within easements granted to protect aviation, and off Airport without easements.

For Runway 6-24, the preferred alternative would remove the vegetation obstructions, allowing the Airport to maintain the current status of the runway. The vegetation removal in the approach of Runway 6 would impact 3.7 acres of trees and the approach to Runway 24 end would impact 19.7 acres of mostly trees. Most of the vegetation management would be either on Airport property or within aviation easements on State Forest property. Approximately 3.2 acres of the tree removal would be within the State Forest where there are no existing easements, and an easement may be needed to manage vegetation long-term. All but 0.9 acres of the vegetation management would be within Priority Habitat of Rare Species. Most of the forested habitat would be converted to successional habitat that would continue to support rare species and provide other ecosystem functions. The vegetation management along portions of both Edgartown-West Tisbury Road and Barnes Road would affect the viewshed of the bike path and traveling vehicles. The total cost of the project is estimated at \$1.3 million.

For Runway 15-33, the preferred Runway 15-33 Reconstruction alternative (described below) would eliminate the need to remove trees within the State Forest on the Runway 15 end. This alternative would require 9.5 acres of vegetation management on the sides of the Runway 15 end and in the approach to the Runway 33 end, all on Airport property.

Runway 15-33 Reconstruction

Runway 15-33 is the secondary runway at Martha's Vineyard Airport and was last reconstructed in 1992, with an expected service life of 20 years. The runway is showing signs of advanced deterioration with

distresses such as weathering and cracking. In addition, the runway was previously 150 feet wide, and the excess pavement along each side was never removed and has deteriorated to where it is disintegrating and causing FOD to migrate onto the runway.

As described above, the preferred alternative for Runway 15-33 would reduce the arrival length (landing distance available) on Runway 33 by 275 feet. The Airport has reviewed current usage of the runway, has solicited comments from Cape Air and the U.S. Coast Guard, both of which rely on Runway 33 for arrivals, and has determined that a reduction in arrival length of 275 feet would not adversely affect their operations. The total cost of this alternative (including Taxiway E reconstruction) would be \$10.4 million. In the future, the operational length of Runway 15-33 will need to be studied in more detail to determine the optimum arrival length for future operations.

Taxiway E Reconstruction

Taxiway E provides skewed, or non-perpendicular, access to both Runways 6-24 and 15-33. This configuration restricts visibility of the runway approach area for aircraft crossing or entering a runway. It also does not provide access to the threshold of Runway 15. To use the full runway length for departures or landings, an aircraft is required to back-taxi on the runway, which increases the risk of conflicts between aircraft using the runway.

The preferred alternative would retain the majority of the existing Taxiway E while reconstructing each end of the taxiway. A new portion of taxiway would be constructed parallel to Runway 15 which will provide a connection to the Runway 15 end and therefore eliminate the need to back taxi. At the Runway 6 end the intersection would be reconstructed to be perpendicular which will enhance visibility for pilots crossing the runway.

Regrade Runway 6-24 Side Safety Areas (No-Build Alternative)

During design of the recent Runway 6-24 rehabilitation, it was determined that the runway safety area side slopes do not meet FAA grading criteria outlined in Airport Design Advisory Circular (AC) 150/5300-13A throughout the length of the entire runway on both sides. The total acreage of the area that would need to be re-graded is approximately 26.4 acres, all within Priority Habitat. The FAA Advisory Circular specifies conditions which the side safety areas should meet (e.g., to have no hazardous ruts or other surface variations, to be well drained, to be capable of supporting rescue equipment, among other requirements). The side safety areas currently meet these requirements.

The FAA has a procedure that allow airports to request FAA approval for non-compliant conditions to remain. The Airport will submit a request to the FAA, and if approved, regrading will not be required, and the No-Build Alternative will be selected. If the modification of standards is not approved by the FAA, the side safety areas will require regrading and the preferred alternative will need to be revised. Because the existing conditions meets FAA's functional requirements for safety areas, and because it is believed the Modification of Standards will be approved, the No-Build Alternative is the preferred alternative.

Terminal Building Renovation

The existing Airport terminal building was constructed in 1999. Since that time, the airline industry and airport experience have undergone significant changes, including changes to airport security, baggage and passenger screening, and the location of airport concessions. This reduced the amount of concessions and passenger amenities such as restrooms and other services that airports provide. Changes to the airline industry include modifying the size of aircraft utilized by commercial service airlines and reductions in on-aircraft catering. These changes have required increases to screened passenger hold rooms, and more concessions and rest rooms post-security. Additionally, many systems (such as HVAC) have neared the ends of their service lives.

The preferred alternative includes the preservation and renovation of the majority of the existing structure and augments it with necessary functional space to meet the current capacity and safety needs of the Airport. The current TSA security screening area would be shifted back behind the terminal building to make room available for passenger queueing and TSA offices. The existing airline offices and break room would be reoriented to allow for baggage to be transferred from the ticket area to TSA baggage screening in the rear of the building. The existing seasonal vinyl tent and port-a-potties, along with a paved area used to park equipment located in the rear of the building, would be replaced with a permanent structure with adequate seating, air conditioning, and restrooms to accommodate the existing passenger loads. An area will be designated for Cape Air, an air carrier which operates year-round, to provide a heated waiting area for non-secure passengers. Currently Cape Air's waiting area is an outdoor pavilion located to the plan-right of the terminal building.

A new three-season pavilion will be erected behind the existing courtyard to accommodate the seasonal peak in arrival baggage. The existing baggage claim area will be upgraded with energy saving measures to maintain operation within the winter months. A new air-lock vestibule will be constructed on the front of the terminal building beneath an existing overhang to meet the state law requirement for building code efficiency.

Preserving the look and feel of the facility, renovation would include updating internal communications and technology, along with replacement of aging heating, ventilation, and cooling (HVAC) equipment and meeting other required codes. The facility's power capacity and security would also be updated to meet today's needs. The majority of the improvements would be internal, or to the airfield side of the existing terminal building, and not able to be viewed from the curb line. The total cost of this alternative would be \$16.9 million.

Access Road Improvements

At the intersection of Airport Road and Edgartown-West Tisbury Road, traffic is constant and often causes a queue on both roads. Making the left turn from Airport Road onto Edgartown-West Tisbury Road is often difficult, which causes a backup of vehicles waiting to turn both left and right since Airport Road is currently one lane. For vehicles traveling east on Edgartown-West Tisbury Road, the single lane causes a wait when a vehicle attempts to make a left turn onto Airport Road and vehicles traveling east cannot pass.

The preferred alternative is a new right-turn lane on Airport Road for turns onto Edgartown-West Tisbury Road. The purpose of this alternative is to reduce the queue on Airport Road by filtering out the

right-hand turn vehicles and shortening the queue. The right turn lane partially meets the need by reducing the wait time on Airport Road. This alternative would cost approximately \$608,000 to design and construct. This incremental improvement is the preferred alternative since it provides reduced wait time, causes the least amount of land disturbance and net new impervious surface, and is less costly than other alternatives.

Aircraft Parking and Movement Areas

Currently the Airport has four paved aprons for aircraft parking: the Southeast Ramp, North Ramp, Restaurant Ramp, and the Transient Tie-Down Ramps. The Southwest Ramp refers to the paved Transient Tie-Down Ramp and the adjacent area occupied by hangars and pavement. (Note: All of these have at times been referred to as “aprons,” and the terms apron and ramp are interchangeable.)

The Airport has seen a reduction in usable apron area for General Aviation over the last few years, due to various geometric changes required on the ramps. Overall approximately 158,000 square feet of useable space has been lost, and the Airport needs to replace that lost apron area for parking and movement of aircraft to maintain the existing operations.

There are two proposed improvements, on the Southeast Ramp and the Southwest Ramp.

On the Southeast Ramp a new stub taxiway is proposed to provide for more spaces for larger aircraft while still providing a taxilane to be used for future hangar access. Reconstructing the Southeast ramp would create nine tie-down spaces for Group II aircraft, and five spaces for a Cessna Citation X. This alternative has a net decrease of impervious surface and disturbs approximately 0.3 acre of grass within Priority Habitat. However, additional spaces would still be needed after construction. The cost of this alternative is approximately \$1.1 million.

The second component of this project is a reconfiguration of the Southwest Ramp. The Southwest Ramp is located just south of Taxiway D and contains approximately 48 tie-down spaces (also identified as the Transient Tie-Down Ramp). The Southwest Ramp also includes the area southeast of the tie-down spaces, where there are currently four buildings and a parking lot with a taxilane that provides access to additional existing hangars. The buildings are approaching the ends of their useful lives. This alternative includes the removal of the four existing buildings, parking lot, and adjacent vegetated areas and provides a completely paved apron area. Three of the four buildings are currently used for equipment storage which the Airport has determined can be eliminated or accommodated elsewhere. The fourth building is owned by the tenant of a leased parcel, and the lease's term ends in 2025. Removal of the four buildings would reduce hangar space by approximately 21,700 square feet.

The new apron area would accommodate approximately 33 General Aviation aircraft, allowing larger aircraft to park on the existing apron. Adjacent to the pavement would be a 56-space parking lot for those who need to access their tie-downs or hangars. Reconfiguring this apron would add approximately 2.2 acres of new impervious surface and temporarily disturb 0.2 acre of vegetated land, mostly within non-Priority Habitat. The configuration of the newly paved Southwest Ramp can be adjusted to accommodate the Airport's demands closer to the time of construction. This alternative meets the needs of the Airport by providing additional parking space for the Airport. The cost of design and construction of this alternative would be approximately \$4.2 million.

Alternatives Considered

The alternatives considered for this project are summarized below. Alternatives development begins during the Master Plan Update, when an airport's existing facility condition and future facility needs are studied. A wide range of alternatives may be considered and narrowed down based on aeronautical and environmental analysis as well as public input. This project considered the Master Plan Update findings and recommendations and conducted additional studies to determine a reasonable range of alternatives for further study. Below in **Table ES-2** is a summary of the alternatives that were investigated during the preliminary engineering and environmental analysis conducted for this project.

NEPA also requires consideration of a No-Build Alternative for each project. The No-Build Alternatives reflect conditions as they are expected to exist in the future if the Airport does not implement the proposed Projects. The No-Build scenarios are not included below but are described for each project in Chapter 3.

Table ES-2 Summary of Alternatives Considered and the Basis for Selection or Rejection

(Preferred alternatives are shaded.)

PROJECT	BASIS FOR SELECTION OR REJECTION
1. Business Park Lots 34 and 38	Within Business Park and meets need by providing needed revenue; previously developed.
2. Aircraft Hangar Development	Meets need by providing hangar space as demand arises.
3. Improve Fuel Farm Access and Safety	Reduces Foreign Object Debris on aprons, improving safety; simplifies maintenance.
4. Airspace Vegetation Management – Remove Vegetation from FAR Part 77 Approach and Departure Surfaces	Meets need to keep airspace clear of obstructions, but would require substantially more vegetation removal (mostly trees) overall, in Priority Habitat, and in the Manuel F. Correllus State Forest. Not mandated by FAA at this time.
4A. Airspace Vegetation Management - Runway 6	Critical safety project that meets need by removing vegetation which is obstructing regulated airspace while minimizing impacts.
4B. Airspace Vegetation Management - Runway 24	Critical safety project that meets need by removing vegetation which is obstructing regulated airspace while minimizing impacts, but requires tree removal and likely easement in State Forest. Likely to trigger the state's Article 97 process.
5-1A. Runway 15-33 and Taxiway E Reconstruction - Maintain Existing Thresholds, Construct Partial Parallel Taxiway E and Remove Vegetation Obstructions	Maintains current runway dimensions and utility but requires vegetation management in State Forest. Considering the regulatory requirements of Section 4(f) and Article 97, this is not believed to be a viable alternative.
5-1B. Runway 15-33 and Taxiway E Reconstruction - Maintain Existing Thresholds, Construct North Parallel Taxiway E and Remove Vegetation Obstructions	Same as 5-1A.
5-1C. Runway 15-33 and Taxiway E Reconstruction - Maintain Existing Thresholds, Construct South Parallel Taxiway E and Remove Vegetation Obstructions	Same as 5-1A.

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PROJECT	BASIS FOR SELECTION OR REJECTION
5-1D. Runway 15-33 and Taxiway E Reconstruction - Maintain Existing Thresholds, Construct Full Parallel Taxiway E and Remove Vegetation Obstructions	Same as 5-1A.
5-2. Runway 15-33 and Taxiway E Reconstruction - Maintain Existing Thresholds, Raise Runway 15 End, Construct South Parallel Taxiway E and Remove Vegetation Obstructions	Maintains the length and utility of the runway without having to remove vegetation obstructions within the State Forest, but requires substantial fill and Priority Habitat impacts.
5-3. Runway 15-33 and Taxiway E Reconstruction - Displace Runway 15-33 Threshold 275' and Extend Runway 33 275', Construct South Parallel Taxiway E and Remove Vegetation Obstructions	Maintains the runway's functionality but 275 feet of additional pavement would be constructed on the Runway 33 end, adding more impervious surface and more Priority Habitat impact.
5-4. Runway 15-33 and Taxiway E Reconstruction - Shift Runway 15-33 275', Construct South Parallel Taxiway E and Remove Vegetation Obstructions	Shifts Runway 15-33 275 feet to the south. This alternative is more costly and would result in more impervious surface, more Priority Habitat impact, and more vegetation management than other alternatives.
5-5. Runway 15-33 and Taxiway E Reconstruction - Displace Runway 15 Threshold 275', Construct Partial Parallel Taxiway E and Remove Vegetation Obstructions	Reduces the arrival length on Runway 33 by 275 feet but eliminates the requirement of vegetation removal in the State Forest on the Runway 15 end and minimizes the impacts of Runway 15-33 and Taxiway E improvements.
6. Regrade Runway 6-24 Side Safety Areas	Results in approximately 26.4 acres of grading around the runway within Priority Habitat. Because the existing conditions meets FAA's functional requirements for safety areas, and because it is believed FAA will approve a Modification of Standards for the substandard grades, the No-Build Alternative is preferred.
7-1A. Terminal Building Renovation – Preserve and Renovate – Seasonal	Includes the preservation and renovation of most of the existing structure, augmented with the functional space necessary to meet the current capacity and safety needs of the Airport. Includes a new three-season pavilion, new air-lock vestibule, and many system upgrades.
7-1B. Terminal Building Renovation – Preserve and Renovate – Year Round	Similar to 1A, with the option of encompassing the existing courtyard with a permanent structure and elongating the arrival baggage claim area, requiring heating during winter months when passenger volumes are at their lowest.

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PROJECT	BASIS FOR SELECTION OR REJECTION
7-2. Terminal Building Renovation – Preserve Central Corridor and Renovate	Preserves the central corridor or main lobby area and removes the remaining portions of the building to start new. This option is much more costly than other alternatives and would create a large disruption to operations along with likely visual changes of the building from the curb line.
7-3. Remove and Replace	Removes the existing structure and starts new from the ground up. In addition to the greatest cost, this option would result in the greatest visual change from the curb line and create the largest disruption to operations.
8-1. Access Road Improvements - Right-Turn Lane	Proposes a new right-turn lane on Airport Road for turns onto Edgartown-West Tisbury Road. Partially meets the need by reducing the wait time on Airport Road; causes the least amount of land disturbance and net new impervious surface; and is less costly than other alternatives.
8-2. Access Road Improvements - Roundabout	Adds a roundabout at the intersection of Airport Road with Edgartown-West Tisbury Road. This alternative provides the greatest improvement to traffic exiting the Airport, but slightly reduces the level of service for through traffic on Edgartown-West Tisbury Road. It is more costly and affects more habitat than the preferred alternative.
8-3. Access Road Improvements - Connector Road	Widens and paves the service road, Fire Road 53, to connect the two sides of airport property. This alternative partially meets the need by reducing the number of vehicles attempting to turn left from Airport Road but will not help those who are traveling east on Edgartown-West Tisbury Road. It has more habitat impact and new impervious and is substantially more expensive than the preferred alternative.
8-4. Access Road Improvements - Left-Turn Lane	Would add both left-turn and right-turn lanes on Edgartown-West Tisbury Road by widening the road. Habitat disturbance and new impervious surface would be minimal. This alternative partially meets the need by reducing the traffic backup when traveling east on Edgartown-West Tisbury Road, but the wait on Airport Road would remain the same.
9. Improve Aircraft Parking and Movement Areas	
9-1A. Pave Transient Turf Tie-Down Area	Paves the existing turf tie-down area and reconfigures the layout to maximize aircraft parking. This would add an additional 5.1 acres of new impervious surface in

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PROJECT	BASIS FOR SELECTION OR REJECTION
	Priority Habitat. It would cost \$4.6 million and would not provide any additional spaces for Group II or larger aircraft, so it does not meet the need.
9-1B. Pave Transient Turf Tie-Down Area, Reduced Pvmt.	Similar to 9-1A, with less new pavement, but was rejected for the same reasons.
9-2A. Reconfigure Existing Southeast Ramp	Removes existing pavement markings and reconfigures the apron, creating space for additional aircraft. This alternative partially meets the Airport needs in adding aircraft parking, but it was eliminated as it does not add as many parking spaces as the Airport needs.
9-2B. New Stub Taxiway to Southeast Ramp	Would add a stub taxiway to the Southeast Ramp to provide for more spaces for larger aircraft while still providing a taxilane to be used for future hangar access. The additional spaces meet the need of the Airport better than the previous alternatives in that there are more spaces for larger aircraft, but additional spaces would still be needed after construction.
9-3. Reconfigure Southwest Ramp	Reconfigures the Southwest Ramp by removing four existing buildings, a parking lot, and adjacent vegetated areas and providing a completely paved apron area. It would add approximately 2.2 acres of new impervious surface, mostly within non-Priority Habitat. It would meet the Airport's aircraft parking needs by providing an additional 4.4 acres of apron space.

Permits and Approvals Required

The anticipated permits and approvals needed for the proposed Projects and the status of these approvals are listed in **Table ES-3**.

Table ES-3 Anticipated Permits and Approvals for the Martha's Vineyard Airport Five-Year Capital Improvement Plan

Issuing Agency	Approval or Permit	Status
Executive Office of Energy and Environmental Affairs	Secretary's Certificate under the Massachusetts Environmental Policy Act (MEPA)	Draft Environmental Impact Report (DEIR) submitted herein. A Final EIR (FEIR) will be noticed following the close of the comment period and issuance of the Secretary's Certificate on the DEIR.
Federal Aviation Administration (FAA)	Finding of No Significant Impact (FONSI) under the National Environmental Policy Act (NEPA)	Environmental Assessment (EA) submitted herein, FONSI anticipated at the conclusion of the NEPA process
FAA	Airport Layout Plan Approval	Approval to be issued after the FONSI
FAA	40 CFR Part 77, Form 7460-1 Construction or Alteration Requiring Notice	As required prior to construction
USEPA Region 1	National Pollutant Discharge Elimination System, Construction General Permit	A Notice of Intent and a construction-related stormwater pollution prevention plan will be developed by the contractors prior to construction of each project
DEP Underground Injection Control Program	UIC Class V Technical Compliance Form for Stormwater Wells	Determined during 30% design
Natural Heritage and Endangered Species Program	Conservation and Management Permit	Application to be submitted after the Secretary's Certificate on the FEIR
Massachusetts Department of Environmental Protection (MassDEP)	Massachusetts Contingency Plan	As required. Hazardous materials encountered during the development would be addressed in accordance with applicable Massachusetts Contingency Plan regulations.
MassDEP and Department of Labor Standards (DLS)	BWP AQ 04 Asbestos Removal Notification form	The Airport will submit a BWP AQ 04 Asbestos Removal Notification form to MassDEP if it is determined to be applicable.
MassDEP	BWP AQ 06 Notification Prior to Construction or Demolition form	The Airport will submit a BWP AQ 06 Notification Prior to Construction or Demolition form to MassDEP if it is determined to be applicable.
Commonwealth of Massachusetts	Article 97 of Amendments to Massachusetts Constitution	Applicability to be determined as design progresses.

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Issuing Agency	Approval or Permit	Status
Massachusetts Department of Conservation and Recreation	Construction Access Permit	Applicability to be determined as design progresses.
Massachusetts Department of Transportation	State Highway Access Permit	Required for changes to Airport Road intersection with Edgartown-West Tisbury Road
Martha's Vineyard Commission	Development of Regional Impact Permit	Applicability to be determined as design progresses; likely to be required for hangar development.

Impacts

Project impacts are summarized in **Tables ES-4 and ES-5** below in terms of acreage of land to be regraded, net acreage of land to become impervious, and acreage of vegetation management or tree cutting.

Table ES-4 Approximate Areas of Overall Disturbance for Proposed Action (Acres)

PROJECT	EXISTING VEGETATED LAND TO BE REGRADED	NET NEW IMPERVIOUS	VEGETA- TION MGMT.
1. Business Park Lots 34 and 38		1.2	
2. Aircraft Hangar Development	0.8	1.0	
3. Improve Fuel Farm Access and Safety	0.2		
4A. Airspace Vegetation Management - Runway 6	0.3		3.7
4B. Airspace Vegetation Management - Runway 24			19.7
5-5. Runway 15-33 and Taxiway E Reconstruction - Displace Runway 15 Threshold 275', Construct Partial Parallel Taxiway E and Remove Vegetation Obstructions	10.1	-6.0	9.5
7. Terminal Building Renovation			
8-1. Access Road Improvements - Right-Turn Lane	0.2	0.1	
9-2B and 9-3. Aircraft Parking and Movement Areas - New Stub Taxiway to Southeast Ramp and Reconfigure Southwest Ramp	0.5	1.9	1.0
TOTAL	12.0	-1.9	33.9

Table ES-5 Approximate Areas of Disturbance in Priority Habitat for Proposed Action (Acres)

PROJECT	EXISTING VEGETATED LAND TO BE REGRADED	NET NEW IMPERVIOUS	VEGETA- TION MGMT
1. Business Park Lots 34 and 38		1.2	
2. Aircraft Hangar Development	0.7	1.0	
3. Improve Fuel Farm Access and Safety	0.1		
4A. Airspace Vegetation Management - Runway 6	0.3		2.8
4B. Airspace Vegetation Management - Runway 24			19.7
5-5. Runway 15-33 and Taxiway E Reconstruction - Displace Runway 15 Threshold 275 feet, Construct Partial Parallel Taxiway E and Remove Vegetation Obstructions	10.1	-6.0	9.5
7. Terminal Building Renovation			
8-1. Access Road Improvements - Right-Turn Lane			
9-2B and 9-3. Aircraft Parking and Movement Areas - New Stub Taxiway to Southeast Ramp and Reconfigure Southwest Ramp	0.3	0.0	
TOTAL	11.4	-3.8	32.0

Mitigation Measures

Beneficial measures and mitigation commitments are summarized in Table ES-6 below. More detail and discussion is provided in Chapter 6.

Table ES-6 Summary of Beneficial Measures and Mitigation Commitments

Resource Category ¹	Beneficial Measure/Mitigation Commitments
Water Resources (MEPA/NEPA)	<ul style="list-style-type: none"> Permanent Best Management Practices (BMPs) including vegetated filter strips, water quality dry swales, new deep-sump and hooded catch basins, and subsurface infiltration structures Implementation of an erosion and sedimentation control program for each construction project
Air Quality (MEPA/NEPA)	<ul style="list-style-type: none"> Mitigating fugitive dust emissions through construction best management practices Requiring compliance with the requirements of MassDEP's Clean Construction Equipment Initiative Requiring that gasoline and diesel motorized construction equipment be well maintained and in good running order to minimize exhaust emissions Requiring record-keeping of the routine maintenance programs for internal combustion engine-powered vehicles and equipment

Resource Category ¹	Beneficial Measure/Mitigation Commitments
	<ul style="list-style-type: none"> • Where feasible, using alternative-fueled or electric equipment • Requiring construction equipment to meet the USEPA's Tier 4 Emissions Standards • Requiring that contractors enforce Massachusetts' Anti-Idling law (310 CMR 7.11) • Encouraging contractors to prepare transportation management plans to reduce worker travel by single-occupancy vehicle to the Airport
Climate and Greenhouse Gas Emissions (MEPA/NEPA)	<ul style="list-style-type: none"> • At the proposed Terminal Building Renovation and Aircraft Hangar Development Projects: <ul style="list-style-type: none"> ◦ Designing new buildings with solar-ready rooftops to the extent required by the building code in effect at the time of construction and considering installation of solar panels ◦ Installing higher performance heat pumps ◦ Replacing HVAC with a variable refrigerant flow system ◦ Installing an energy recovery ventilator as part of the variable refrigerant flow system ◦ Improving lighting efficiency ◦ Install daylighting controls in certain areas ◦ Increasing wall and roof insulations ◦ Improving curtain wall glass performance, decreasing size of curtain wall, and improving curtain wall glazing ◦ Considering Passive House improvements to hangars • Examining the potential for solar photovoltaic systems at other Airport infrastructure • Considering the Massachusetts Department of Energy Resources' recommended energy conservation measures in future versions of the Airport's Capital Improvement Plan • Requiring compliance with the requirements of the MassDEP's Clean Construction Equipment Initiative • Requiring that gasoline and diesel motorized construction equipment be well maintained and in good running order • Requiring record-keeping of the routine maintenance programs for internal combustion engine-powered vehicles and equipment • Where feasible, using alternative-fueled or electric equipment • Requiring that contractors enforce Massachusetts' Anti-Idling law (310 CMR 7.11) • Encouraging contractors to prepare transportation management plans to reduce worker travel by single-occupancy vehicle
Natural Resources and Energy Supply (MEPA/NEPA)	<ul style="list-style-type: none"> • Energy efficiency measures discussed above under Section 6.5.3, <i>Climate and Greenhouse Gas Emissions</i> • Installing LED technology into all new or replaced airfield lighting and signage, where appropriate • Incorporating low flow/flush into the proposed new buildings • Managing waste according to applicable federal, state, and local laws and regulations

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Resource Category ¹	Beneficial Measure/Mitigation Commitments
Biological Resources (MEPA/NEPA)	<ul style="list-style-type: none"> • Avoidance and minimization measures will include delineation of work areas, contractor training, and where appropriate, bulk and manual transplanting, seed bank preservation, and follow-up monitoring • Mitigation measures may include habitat enhancement or in lieu fee and will be developed in conjunction with the NHESP through the permitting process
Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety Risks (MEPA/NEPA)	<ul style="list-style-type: none"> • Drawing from the local workforce to the extent practicable • Coordinating with the towns and local groups to ensure continued safe usage of the bike path and other recreational facilities during project construction
Hazardous Materials, Solid Waste, and Pollution Prevention (MEPA/NEPA)	<ul style="list-style-type: none"> • Notifying MassDEP if a reporting condition is identified per the Massachusetts Contingency Plan • Managing soils and groundwater in accordance with the applicable state and federal regulations including appropriate regulatory submittals such as a Release Abatement Measure Plan for work conducted within the limits of the active disposal site boundary associated with RTN 4-0027571 • Sampling potential asbestos containing building materials (ACBMs) and abating all asbestos according to all applicable state (310 CMR 7.15) and federal regulations prior to demolition activities. • Submitting a BWP AQ 06 Notification Prior to Construction or Demolition form to MassDEP if it is determined to be applicable. • Implementing spill response programs in the event of a spill or leak and contacting the appropriate regulatory agency • Continuing to update the Airport's existing Spill Prevention, Control and Countermeasure Plan • Performing special handling, dust control, and management of contaminated soil and groundwater to provide adequate protection to workers and any nearby sensitive receptors • Coordination with MassDEP on managing soils with PFAS contamination, if any. • A permanent identification number would be obtained in accordance with 310 CMR 30.000 if a proposed Project generates hazardous waste and/or waste/oil
Surface Transportation (MEPA) ³	<p>The airport access road improvements (adding a right-turn lane) would require a State Highway Access Permit from the Massachusetts Department of Transportation. As discussed in Chapter 5, <i>Environmental Consequences</i>, the Airport will coordinate with the Towns of West Tisbury and Edgartown on permanent and construction-period signage and lighting, as necessary, to promote the safe use of the Bicycle Path.</p>

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Resource Category¹	Beneficial Measure/Mitigation Commitments
Scenic Qualities, Open Space and Recreational Resources (MEPA) and Visual Effects (Including Light Emissions) (NEPA)	The Airport will coordinate with the Towns of West Tisbury and Edgartown on permanent and construction-period signage and lighting, as necessary, to promote the safe use of the Bike Path. The Airport will also limit uncontrolled light emissions by shielding exterior light fixtures to the extent practicable.
Department of Transportation Act, Section 4(f) (NEPA)	<p>The Airport will coordinate with the Towns of West Tisbury and Edgartown on permanent and construction-period signage and lighting, as necessary, to promote the safe use of the Bike Path.</p> <p>The Airport will coordinate with the Department of Conservation and Recreation regarding vegetation management timing and methods to minimize disruption of users of the State Forest.</p>

1 INTRODUCTION

1.1 THE CAPITAL IMPROVEMENT PLAN

Public-use airports periodically consult with the Federal Aviation Administration (FAA) to identify critical airport development and to determine the capital needs for those projects and a schedule for funding and constructing them. The product of this consultation is the Capital Improvement Plan, which serves as the basis for the subsequent distribution of grant funds under the federal Airport Improvement Program. The Capital Improvement Plan (CIP) is reviewed and updated every year by FAA and the airport as airport infrastructure needs evolve. At Martha's Vineyard Airport, the CIP includes a schedule of projects through 2029 and identifies projects at unspecified years beyond 2029 as well.

This Draft Environmental Impact Report / Environmental Assessment (DEIR/EA) addresses Martha's Vineyard Airport's Capital Improvement Plan (the Projects) that are planned to be constructed in the foreseeable future (in this case, through 2030) and that have physical footprints, i.e., that could impact environmental resources under state or federal regulatory jurisdiction. These Projects have evolved since the previous environmental submittal was issued (an Environmental Notification Form (ENF), described in Section 1.2 below and appended to this document). The ENF projects and the currently proposed Projects are listed below in **Table 1-1**.

1.2 REQUIREMENT FOR A NOTICE OF PROJECT CHANGE, ENVIRONMENTAL IMPACT REPORT AND ENVIRONMENTAL ASSESSMENT

The Massachusetts Environmental Policy Act or MEPA (301 CMR 11.00) has jurisdiction over projects that meet certain thresholds and require state permits or receive state funding. The CIP includes projects which, individually or cumulatively, will meet certain MEPA thresholds. Because MEPA regulations at 301 CMR 11.01(2)(c) do not allow related projects to be "segmented" or considered individually, the various project impacts must be considered collectively in determining MEPA jurisdiction. Per the thresholds in 301 CMR 11.03, depending on which alternatives are selected, the Projects could result in:

- Direct alteration of 25 or more acres of land;
- Creation of ten or more acres of impervious area; and
- Greater than two acres of disturbance of designated priority habitat.

These thresholds all require an ENF, and the impervious area threshold also requires an Environmental Impact Report (EIR).

In accordance with these requirements, the Airport prepared an ENF. The ENF included information on the proposed Projects. The Massachusetts Executive Office of Energy and Environmental Affairs issued a MEPA Certificate on the ENF on February 22, 2019. The MEPA Certificate mandated preparation of an EIR and specified the scope of analysis needed in the EIR to satisfy MEPA requirements. The MEPA Certificate is reproduced here in its entirety (Appendix A).

Table 1-1 Proposed Projects

Project as Listed in Environmental Notification Form (ENF)	Currently Proposed Project	Location¹	Proposed Year of Construction
(Not included)	Business Park Lots 34 and 38 ²	Landside	2021
Construct Concrete Fuel Pad at Fuel Farm	Improve Fuel Farm Access and Safety	Airside	2022
Construct New Aircraft Hangars	Aircraft Hangar Development ²	Airside	2022
(Not included)	Airspace Vegetation Management	Airside and Landside	2023
Rehabilitate Runway 15/33 and Regrade Side Safety Areas	Runway 15-33 Reconstruction	Airside	2023
Remove Existing Taxiway E and Construct New Taxiway E	Taxiway E Reconstruction	Airside	2023
Runway 6-24 Side Safety Areas and Primary Surface Obstructions	Regrade Runway 6-24 Side Safety Areas	Airside	NA ³
Expand and Renovate Existing Terminal Building	Terminal Building Renovation	Landside	2028
Pave Transient Turf Tie Down Area Southeast Ramp Expansion Southwest Ramp Expansion	Aircraft Parking and Movement Areas	Airside	2029
Expand and Renovate Existing Terminal Building (in part)	Access Road Improvements	Landside	2030

Notes:

- 1 Airside refers to “the portion of an airport that contains the facilities necessary for the operation of aircraft, i.e., the secure areas of the Airport, including the airfield, which are accessible only by cleared passengers and staff. Landside refers to “The portion of an airport that provides the facilities necessary for the processing of passengers, cargo, freight, and ground transportation vehicles.”
- 2 The Lots 34 and 38 and Aircraft Hangar Development projects are not on the Capital Improvement Plan but are included here due to MEPA segmentation requirements.
- 3 NA = The project is not proposed in the current Capital Improvement Plan, but may be in future years.

After the ENF was submitted and the MEPA Certificate issued, the Airport became aware of trees obstructing airspace that FAA guidelines indicate should be kept clear of obstructions. A subsequent obstruction analysis, conducted in 2019, confirmed that there are existing or potential vegetation obstructions within all four runway approaches. The Airport is now proposing to remove these vegetation obstructions. Because this project component was not in the ENF, pursuant to 301 CMR 11.10(1), MEPA requires that a Notice of Project Change be submitted with the DEIR/EA.

The EIR process typically involves a DEIR followed by a Final EIR. The Draft EIR is prepared and made public (see Appendix B, Distribution List). A formal public comment period follows, during which a public

consultation session may be held. The proponent then responds to comments and any additional MEPA requirements and prepares a Final EIR, or FEIR. At the conclusion of the EIR process, the Executive Office of Energy and Environmental Affairs normally issues a MEPA Certificate on the EIR. The Certificate documents compliance with MEPA and specifies additional studies that may be needed, if any.

The National Environmental Policy Act or NEPA (40 CFR 1500-1508 and 23 CFR 771) requires federal agencies to determine whether there are significant impacts associated with federal actions, including federally funded projects.

Martha's Vineyard Airport's CIP includes several projects that are federally funded and therefore subject to NEPA. Because it is uncertain whether there are significant impacts, per NEPA (23 CFR 771.115(c)) an Environmental Assessment (EA) must be prepared. The EA process includes opportunities for public review and comment. If, after project environmental impacts and mitigation measures are taken into account, the FAA determines the impacts are not significant, it will issue a Finding of No Significant Impact.

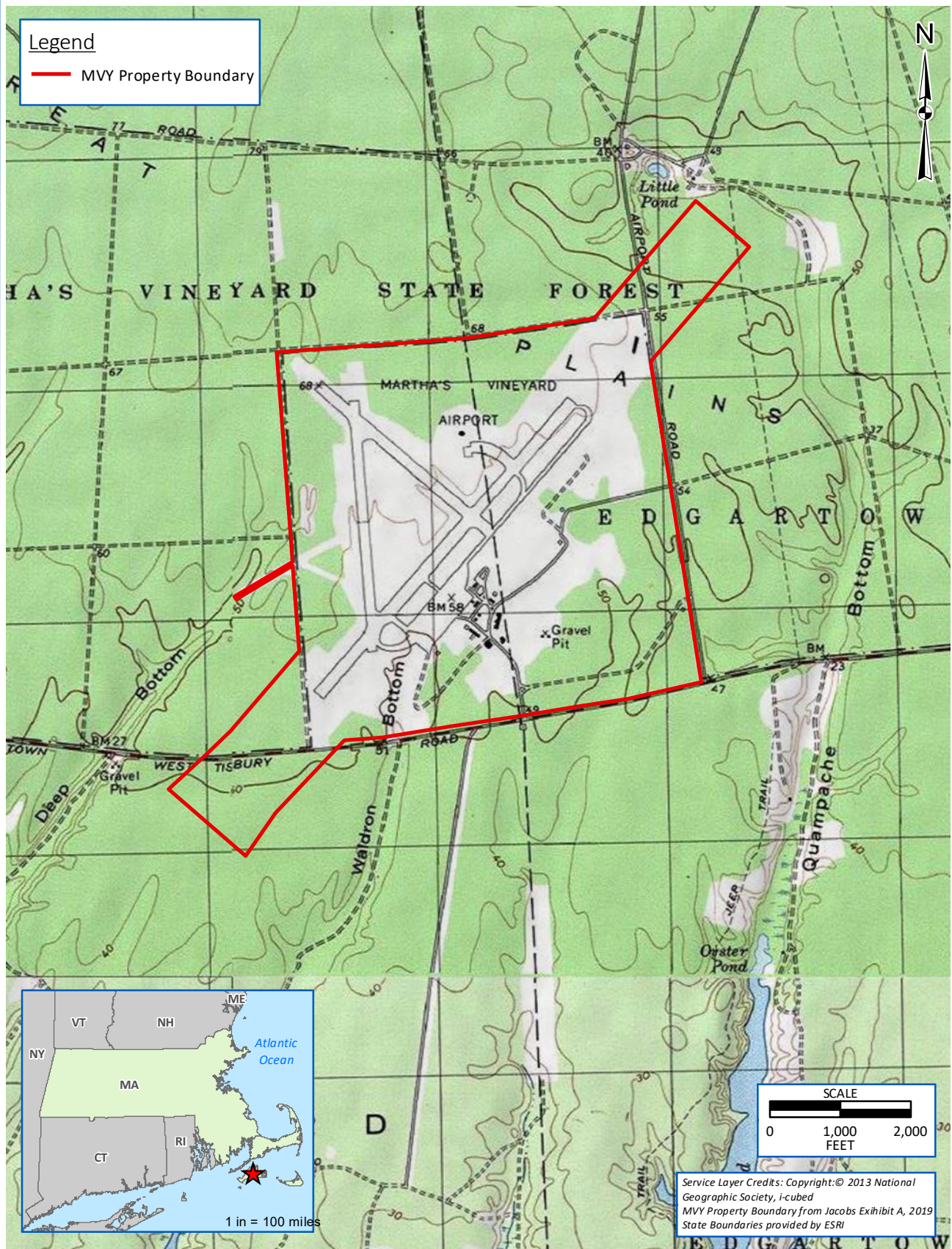
1.3 AIRPORT BACKGROUND

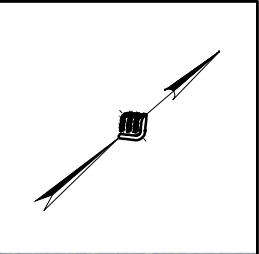
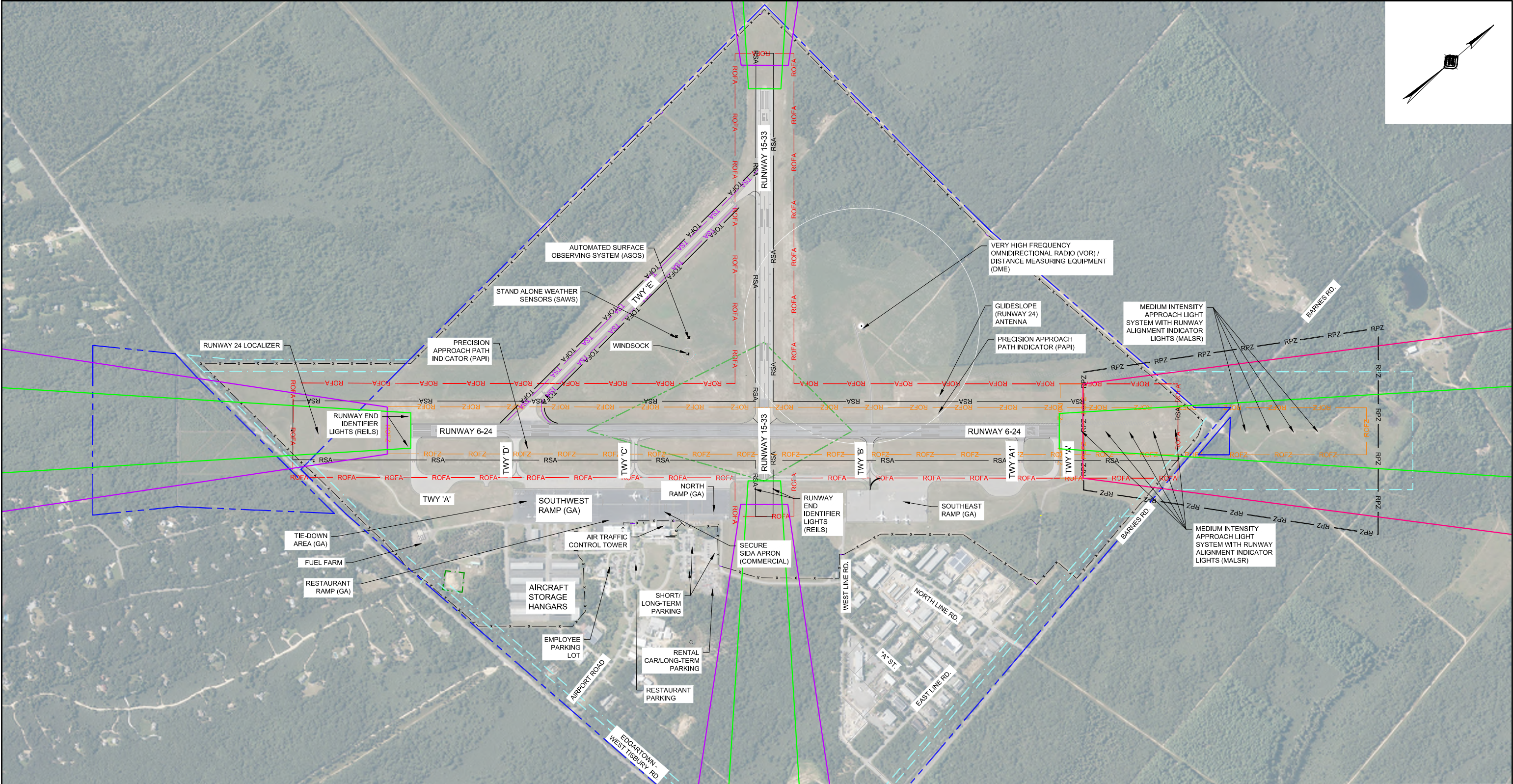
Martha's Vineyard Airport (MVY or "the Airport") is located on the island of Martha's Vineyard (**Figure 1-1**). During the summer months of July and August, Martha's Vineyard is a premier seasonal tourist destination. There are approximately 15,000 year-round residents. However, during the summer months, this number increases to approximately 125,000 (more than an eight-fold increase). Annually, the Airport enplanes over 50,000 passengers with commercial airline destinations identified (**Table 1-2**).

The Airport operates 24 hours a day and has a staffed Air Traffic Control Tower (ATCT). The ATCT is located above the terminal building. The ATCT is open between 6am and 10 pm from May 15th to October 31st and between 7am and 5pm from October 1st to May 14th.

Existing airport infrastructure is discussed below and is shown on **Figure 1-2**.

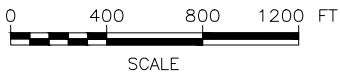
Figure 1-1: Location Map






LEGEND

- SECURITY FENCE LINE
- APPROXIMATE AIRPORT PROPERTY LINE
- APPROXIMATE AIRPORT EASEMENT LINE
- RSA — RUNWAY SAFETY AREA
- POFZ — PRECISION OBJECT FREE ZONE
- ROFZ — RUNWAY OBJECT FREE ZONE
- ROFA — RUNWAY OBJECT FREE AREA
- RPZ — RUNWAY PROTECTION ZONE

TSA — TAXIWAY SAFETY AREATOFA — TAXIWAY OBJECT FREE AREA

DRAFT EIR/EA

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECT DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

					MARTHA'S VINEYARD AIRPORT WEST TISBURY, MASSACHUSETTS ENVIRONMENTAL IMPACT REPORT / ENVIRONMENTAL ASSESSMENT		
					EXISTING AIRPORT INFRASTRUCTURE		
	REV	DATE	DESCRIPTION	BY			
	<div>McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301</div>						
SCALE: 1" = 400'		DESIGN: SRS		1-2			
DRAWN: R.J.L		PROJECT:18226.07					
CHECKED: MTO		DATE: NOVEMBER 2020					

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Table 1-2 Commercial Airline Destinations

Airline	Destination(s)
American Airlines	Ronald Reagan Washington National Airport (DCA), Charlotte Douglas (CLT), Philadelphia International Airport (PHL)
Cape Air	Boston Logan International Airport (BOS), John F. Kennedy International Airport (JFK), White Plains Westchester County Airport (HPN), New Bedford Regional Airport (EWB), Hyannis' Boardman-Polando Field (HYA), Nantucket Memorial Airport (ACK)
Delta	LaGuardia Airport (LGA)
JetBlue	John F. Kennedy International Airport (JFK), Boston Logan International Airport (BOS), Ronald Reagan National Airport (DCA)

Source: Martha's Vineyard Airport Website (November 2020)

1.4 AIRSIDE FACILITIES

The Airport has two runways: Runway 6-24 and Runway 15-33. Runway 6-24, the Airport's primary runway is 5,504 feet long and designed for C-III aircraft. Aircraft are classified by approach speed from A slowest to E fastest, and by dimensions for tail height and wingspan, with I being the lowest tail height and smallest wingspan to VI having the highest tail height and largest wingspan. Runway 15-33, called the crosswind runway because it may be used when there are crosswinds on the main runway, is 3,328 feet long and is designed for B-II aircraft.

The conditions under which a runway or runway end will be used are based on a number of factors, including wind conditions. Ideally, all aircraft will take off and land in the direction of the wind and the pilot will select the runway accordingly. However, runway characteristics (such as length and width), weather conditions, as well as the availability of instrument approach procedures and navigational aids, will also impact a pilot's selection of a runway to utilize.

The Airport presently maintains six taxiways, Taxiways A, A1, B, C, D, and E. Taxiways A, A1, B, C and D are 50 feet wide and meet FAA standards for Taxiway Design Group (TDG) 2 and Runway Design Code (RDC) C-III aircraft. (Taxiway Design Groups are based on aircraft size and range from 1 to 7, smaller to larger.) Taxiway E is 35' wide and has a TDG-1A designation which represents the class of aircraft that primarily use that taxiway. Taxiway A is a full-length parallel taxiway that runs south of Runway 6-24. All taxiways with access to Runway 6-24 (Taxiways A, A1, B, C, and D) intersect with the runway at a 90-degree angle. Taxiway E meets Runways 15-33 and 6-24 at a 45-degree angle.

Operationally, aircraft departing from the terminal or transient parking will utilize Taxiway A to depart from Runway 6-24 and Runway 33, and Taxiway E to depart from Runway 15. The starting point during takeoff typically depends on wind directions. Ideally, aircraft that are preparing to depart from Runway 6-24 will usually exit the aprons (aircraft parking areas) in the terminal area and navigate using full-length parallel Taxiway A and then enter the runway at the end of each taxiway. For arrivals, aircraft

landing on Runways 6 will typically exit the runway at either Taxiways A, A1, or B and will utilize Taxiway A to taxi to the terminal area aircraft parking areas. For aircraft landing on Runway 24, aircraft will typically exit the runway at Taxiways A, C, or D and will similarly use Taxiway A to taxi to the terminal area aircraft parking areas.

For aircraft departing from Runway 15-33, there are several operational configurations. For aircraft departing on Runway 33, aircraft will utilize Taxiway A to taxi to the runway end. For aircraft departing on Runway 15, there are two primary routes. All aircraft will start on Taxiway A. Aircraft can either utilize Taxiway D to cross Runway 15-33 and access Taxiway E, which will provide access to Runway 15-33. From there, aircraft will back-taxi on Runway 15-33 to the Runway 15 end and can proceed to takeoff. Alternatively, aircraft can utilize Taxiway A to taxiway to the Runway 33 end and can back-taxi along the length of Runway 15-33, including crossing Runway 6-24, and then can proceed to takeoff on Runway 15. All aircraft landing on Runway 15 will exit at Taxiway A. For aircraft landing on Runway 33, aircraft can exit at Taxiway E and then follow to Taxiway D and Taxiway A. Aircraft can also back-taxi on Runway 15-33 directly to Taxiway A, if necessary.

1.5 LANDSIDE FACILITIES

The Airport has several facilities vital to successful and efficient daily operation. The terminal building was built in 1998 and provides space for passenger arrival and departure, baggage screening, baggage claim, Transportation Security Administration (TSA) operations, as well as ticket purchasing, rental car services, dining services, restrooms and other activities.

The Airport Rescue and Fire Fighting / Snow Removal Equipment Building is located southwest of the Terminal building and is used to house emergency personnel and medical equipment in the event of an emergency. In addition, equipment to maintain the airport grounds are also stored in this building. Staff dormitories are located on site to ensure airport rescue and/or firefighting services are available 24 hours a day.

The Airport operates as the Fixed Base Operator (FBO) servicing based and transient aircraft. The FBO provides a variety of services which include aircraft fueling, deicing and anti-icing, parking, tie down and/or hangar storage (for transient aircraft), as well as a conference room, flight planning, weather center access, rental car services, a crew lounge/rest area, and many other services. Airport operations staff are responsible for line service, which includes parking aircraft and pumping 100LL, Jet-A fuel, MoGas, and Diesel fuel. The FBO is open daily from 5am until 10pm.

The Airport has seven T-hangars for based aircraft with a total of 74 individual storage units. Aircraft parking/tiedown areas are divided into several areas on the Airport. There are 28 turf tie-down spots east of the fuel farm, as well as a transient tie-down area directly south of Taxiway A.

1.6 AIRPORT ACTIVITY

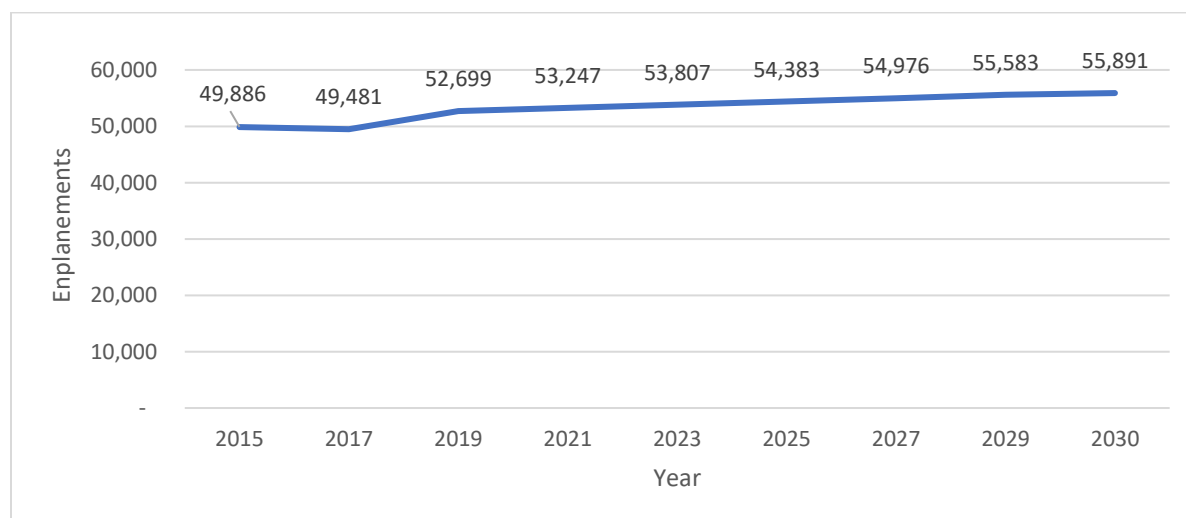
Since Martha's Vineyard is an island, there are only two means of access to the island: either by air or water. Scheduled ferry and air service serve the majority of travelers to/from the Island. Privately owned boats and airplanes provide the remaining transportation options. The FAA Terminal Area Forecast (TAF) records and projects enplanements (the number of passengers boarding flights) and operations (the

number of distinct aircraft takeoffs or landings) at U.S. commercial and general aviation airports. Data regarding enplanements and operations at the Airport can be found below in **Figure 1-3**. In the past five years, the Airport experienced an initial slight decline in enplanements, followed by a steady increase in enplanements. Therefore, the FAA TAF has projected continued marginal growth through 2030.

In terms of total operations, the Airport has experienced a gradual increase from 35,271 in 2017 to an estimated 37,226 in 2019. Data regarding total operations can be found below in **Figure 1-4** while a breakdown of the operations between Air Carrier/Air Taxi/Commuter and General Aviation/Military can be found in **Figure 1-5**. The FAA TAF projects a gradual increase to 39,030 total operations in 2030.

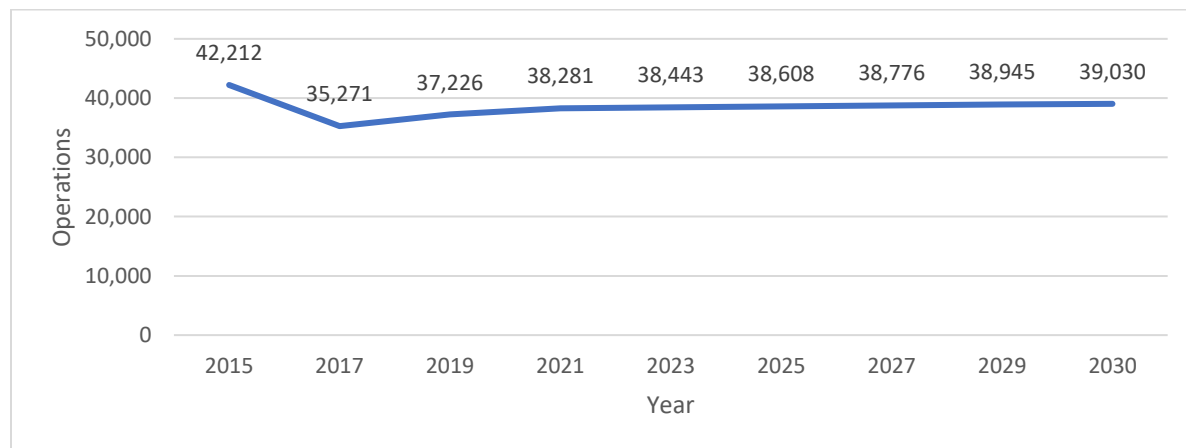
The Airport experiences high seasonal peaks in aircraft operations, with almost 50 percent of all operations conducted within a three-month period (June, July, and August). These peaks are one of the strongest seasonal peaks of any airport in the U.S.

Figure 1-3 Martha's Vineyard Airport Total Enplanements



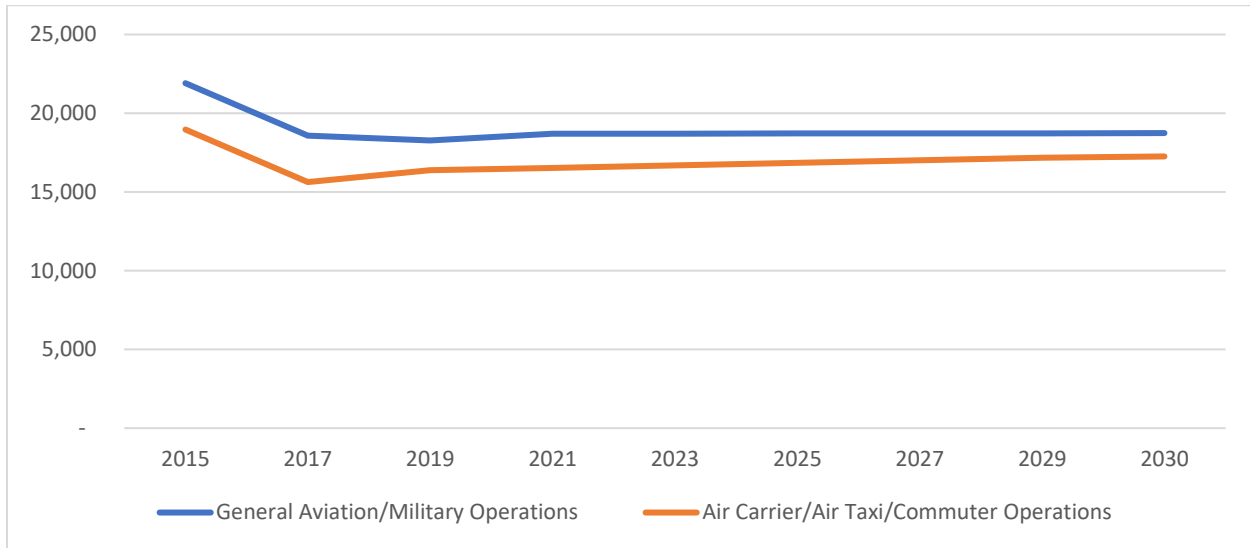
Source: FAA Terminal Area Forecasts 2020

Figure 1-4 Martha's Vineyard Airport Total Operations



Source: FAA Terminal Area Forecasts 2020

Figure 1-5 Martha's Vineyard Airport Operations Breakdown



Source: FAA Terminal Area Forecasts 2020

1.7 DOCUMENT FORMAT AND CONTENT

This DEIR/EA has been prepared to meet format and content requirements of both the MEPA EIR and the NEPA EA. The principal guidance for preparing this document includes:

- MEPA Regulations (301 CMR 11.07, *EIR Preparation and Filing*)
- FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*
- FAA's 1050.1F Desk Reference
- FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*

2 PURPOSE AND NEED

2.1 PURPOSE

The purpose of the proposed Projects is to safely accommodate current and anticipated aviation demand; provide adequate facilities in support of aviation, and provide needed revenue at Martha's Vineyard Airport.

2.2 NEED

The need for the proposed Projects is driven by existing and anticipated aviation demand, the aging condition of current infrastructure, FAA safety and security requirements (particularly those enacted since September 11, 2001), and Airport revenue needs. The need for individual projects is described below. All project locations are shown in **Figure 2-1**. References to FAA design guidelines, unless otherwise noted, refer to FAA Advisory Circular AC 150/5300-13A – Airport Design.

Business Park Lots 34 and 38

The Business Park provides opportunities for commercial enterprises to conduct business operations, while providing the Airport with additional needed revenue. The leasing and commercial use of Business Park Lots 34 and 38 fosters the highest and best use of these lands for private businesses to operate and financially support the Airport. These lots are not required for aviation use and are considered compatible with adjacent land uses.

Business Park Lots 34 and 38 were previously developed in state-designated Priority Habitat of Rare Species without obtaining required approvals. While they are not aviation-related, they are on Airport property and under Airport ownership. Due to the MEPA segmentation clause (301 CMR 11.01), these lots must be considered in conjunction with the CIP.

Aircraft Hangar Development

Aircraft hangars are necessary because they protect aircraft from harsh weather elements and ensure aircraft readiness. Hangars reduce or eliminate the need for using deicing chemicals on aircraft and collection of these chemicals in adverse weather conditions. Hangars also provide additional security to the aircraft when not in use. In addition, hangars generate Airport revenue through ground leases, fuel sales, and other fees. Currently hangar demand exceeds availability of adequate space at the Airport.

The Airport has a potential new tenant interested in leasing a hangar and basing their aircraft at the Airport. Demand for hangar space is difficult to predict but arises periodically, and other potential tenants have asked Airport staff about hangar space recently. The demand for a second hangar at some point in the next few years is anticipated.

Improve Fuel Farm Access and Safety

The existing fuel farm surface and access road consist of crushed asphalt millings. This can become lodged in the tread of the fuel truck vehicle tires and are tracked onto the aircraft apron and have the potential to cause these objects, called Foreign Object Debris (FOD), to foul the runways and taxiways.

FOD can cause damage to aircraft, equipment and airport personnel and poses a significant airport safety hazard.

Repaving the fuel farm surface and access road with asphalt will eliminate the FOD hazard. As part of the project the existing oil-water separator will be replaced with a larger unit that will handle the increase in runoff from the paved fuel farm surface.

Airspace Vegetation Management

In aviation, airspace is the air available to aircraft to fly in. FAA guidance and grant assurances urge airports to monitor surrounding airspace and keep it clear of objects that aircraft may encounter when landing on or taking off from a runway. When objects penetrate protected airspace they are called obstructions. Airspace obstructions are serious hazards which can threaten human life and property.

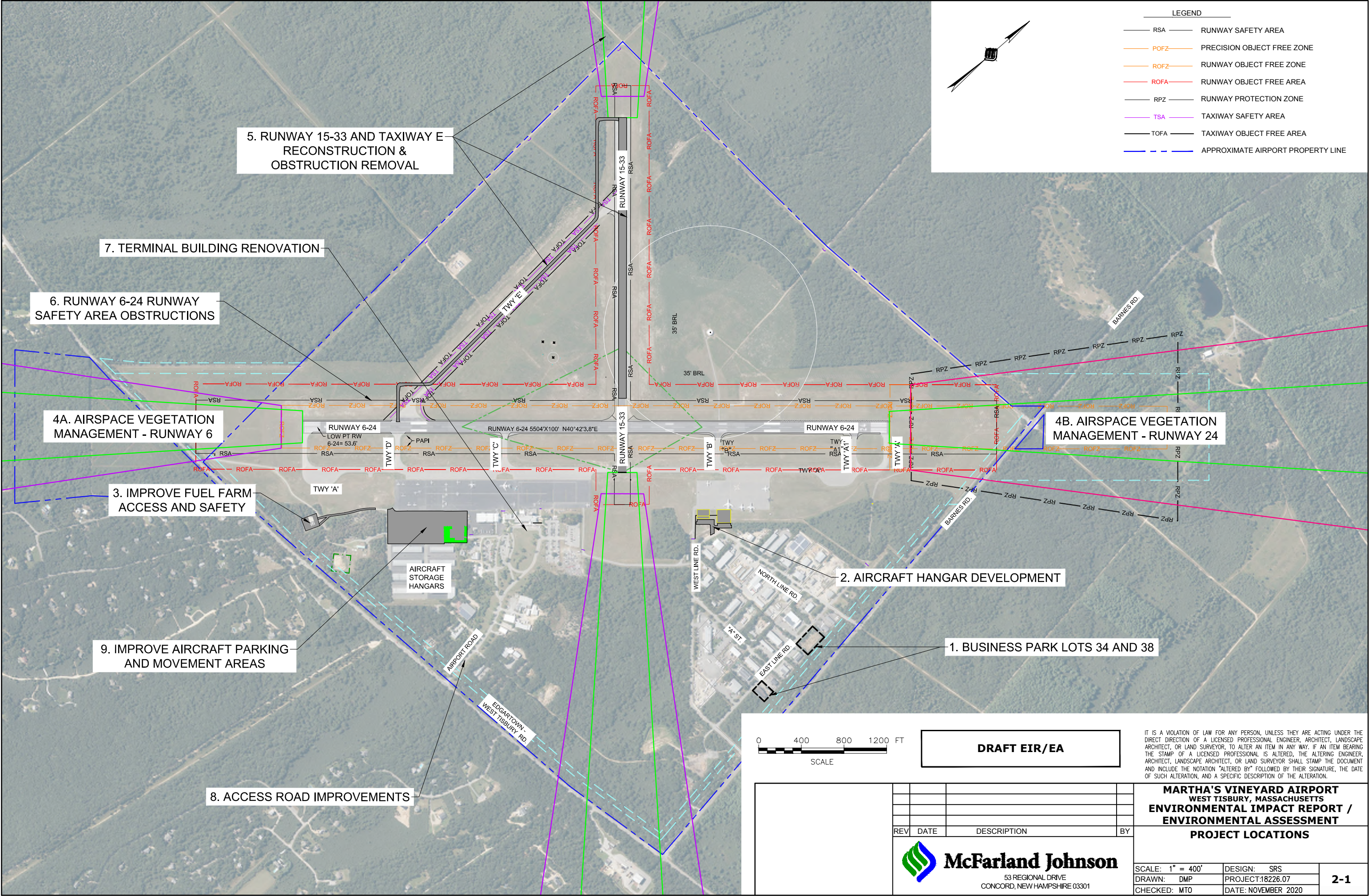
FAA Advisory Circular AC150/5300-13A (Airport Design) defines the various kinds of protect airspace. The Advisory Circular states that "runway approach surfaces should be clear of obstructions." Based upon an obstruction analysis conducted for the Airport in 2019¹, all four runway ends contain vegetation which obstructs protected airspace. The presence of the obstructions prevents the runways from meeting FAA standards and poses a safety hazard to human life and property. Failure to remove the obstructions could cause the FAA to require modifications to the runways. These could include shortening a runway, limiting the size and type of aircraft allowed on a runway, eliminating the use of a runway during inclement weather, or other modifications.

Removing the obstructions is necessary to protect the safety of the flying public and to preserve the current utility of the runways. The vegetation removal will include a habitat management component, which will be developed in consultation with the appropriate agencies.

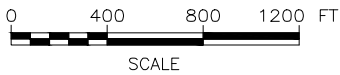
Runway 15-33 Reconstruction

Runway 15-33 is the secondary runway at Martha's Vineyard Airport with a length of 3,328 feet and a width of 75 feet. It is also called the crosswind runway because it may be used when there are crosswinds on the main runway, and pilots prefer to land and take off heading into the wind. The runway was last reconstructed in 1992, and the FAA typically expects a service life of 20 years. The runway is showing signs of advanced deterioration with distresses such as weathering and cracking prevalent. In addition, the runway was previously 150 feet wide, and the excess pavement along each side was never removed and has deteriorated to where it is disintegrating and causing FOD to migrate onto the runway. This excess pavement will be removed and restored as grass habitat which will contribute to the overall acreage of Priority Habitat of Rare Species on the Airport.

¹ McFarland-Johnson, Inc. (2020). *Aeronautical Survey and Approach Obstruction Study (DRAFT)*.




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REV	DATE	DESCRIPTION	BY
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301			

MARTHA'S VINEYARD AIRPORT WEST TISBURY, MASSACHUSETTS ENVIRONMENTAL IMPACT REPORT / ENVIRONMENTAL ASSESSMENT		
PROJECT LOCATIONS		
SCALE: 1" = 400'	DESIGN: SRS	2-1
DRAWN: DMP	PROJECT: 18226.07	
CHECKED: MTO	DATE: NOVEMBER 2020	

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As part of runway reconstruction, the FAA also requires that runway safety areas meet criteria. Runway safety areas are paved or turf areas located at the ends and along the sides of runways that meet FAA criteria for their purpose. They must be capable of supporting aircraft during emergency situations, be free of obstructions, and be cleared and graded to drain runoff. The side safety areas along Runway 15-33, which are turf, require grading to meet these criteria.

Runway 15-33 needs to be reconstructed to current FAA design standards.

Taxiway E Reconstruction

The Taxiway E configuration follows the geometry of the former U.S. Navy configuration, which had three runways in a triangular configuration. Converted from a former runway, Taxiway E provides skewed, or non-perpendicular, access to both Runways 6-24 and 15-33. This configuration restricts visibility of the runway approach area for aircraft crossing or entering a runway. The current configuration of Taxiway E also does not provide access to the threshold of Runway 15. (Runway thresholds are markings that indicate the beginning and end of designated runway space for landings and takeoffs.) To get to the Runway 15 threshold, pilots must taxi aircraft along the runway, which occupies the runway for a longer period and increases the potential for conflicts between aircraft using the runway.

Taxiway E needs to be reconstructed to comply with current FAA design standards and needs to be extended to provide access to the Runway 15 end.

Regrade Runway 6-24 Side Safety Areas

Runway safety areas run along both sides of a runway and off each end, and are designed so that aircraft that overshoot, undershoot, or run off the side of a runway can safely come to a stop. During design of the recent Runway 6-24 rehabilitation, it was determined that the runway safety area side slopes do not meet FAA grading criteria outlined in Advisory Circular (AC) 150/5300-13A throughout the length of the entire runway on both sides.

The side safety areas need to be regraded to meet FAA Criteria.

Access Road Improvements

The curb-side pickup/drop-off area and terminal access road (the Airport-owned Airport Road) are at times congested. Taxis and buses park on the grass, and Airport staff and police officers directing traffic are met with confrontation. The vehicle queue at the entrance road backs up from the State-owned and -maintained Edgartown/West Tisbury Road to the terminal building. The 2016 Master Plan included a traffic analysis, and the intersection of Airport Road and Edgartown/West Tisbury Road varied by time of day from level of service (LOS) C for the morning peak to LOS F for the mid-day peak to LOS E for the evening peak. Level of service is a standard traffic measuring system with LOS A being free flowing traffic, and LOS F being gridlock. Vehicles occasionally cut across the landscaped area, knocking over lighting, to bypass the left-turn queue. A more recent Surface Transportation Study (Appendix G) modeled traffic conditions based on counted vehicle volumes and roadway geometry and determined that the 95th percentile queue lengths at the Airport Road stop sign are 625 feet.

Traffic conditions on Airport Road should be to improved.

Terminal Building Renovation

The current terminal building capacity is insufficient to meet current demand. The existing building provides a total of 9,800 square feet. The 2016 Master Plan Update identified an existing (2014) need of approximately 18,100 square feet and an anticipated (2020) need of 21,850 square feet, more than double the existing capacity, using the Airport Cooperative Research Program Terminal Planning Spreadsheet Model. Martha's Vineyard has seasonal traffic, with almost half of its annual enplanements and operations occurring within three months of the year. Since the Master Plan Update was developed, the airlines have revised their fleet and flight schedules to utilize more Embraer E175 and E190 aircraft, which carry more passengers per flight than the previous CRJ-200.

The current terminal building has existing deficiencies which include security checkpoint capacity deficiencies; outbound baggage screening and make-up capacity and flow inefficiencies; passenger hold-room dysfunction and capacity deficiencies; in-bound baggage claim capacity deficiencies; and access road, curb-side, and traffic flow dysfunction.

Previously constructed in 1999, the pre-September 11, 2001 terminal building does not provide the necessary space to meet existing TSA security requirements. Current conditions lead to long security lines and holding areas in open courtyards with no restrooms or other facilities.

Although the passengers and number of flights at the Airport have not changed substantially in recent years, the type and size of the aircraft have changed over time to accommodate more passengers per flight with fewer flights. Compounding the situation were the scheduled arrival and departure times adopted by several airlines to correlate with their national schedules. This resulted in peak periods of passengers arriving and departing through the terminal facility. Over the last 20 years, the passenger volume peak has overcome the original design of the building's mechanical and electrical infrastructure. The heating and cooling system was not designed for the number of people using the lobby, and the electrical panels no longer have capacity for additional equipment or outlets.

The growth at the Airport over the last 20 years has overcome the original design of the building's mechanical and electrical infrastructure. The heating and cooling system was not designed for the number of people using the lobby, and the electrical panels no longer have capacity for additional equipment or outlets.

The baggage claim area is too small for the number of passengers serviced by the airlines. Airlines are not able to efficiently provide baggage services at the terminal due to the lack of available space and insufficient electrical capacity. This results in baggage not being loaded on the departing aircraft, and unnecessary baggage area congestion and delays for arrivals which further exasperate the peak passengers in the terminal building.

The terminal building needs to be redesigned and renovated to current terminal and building codes and standards, including TSA requirements.

Aircraft Parking and Movement Areas

The 2016 Martha's Vineyard Airport Master Plan Update estimated there was 671,400 square feet of apron space with 82 aircraft parking positions, plus an additional 110,000 square feet of turf with 28 aircraft tie-downs. The Master Plan Update further estimated that aircraft based at the Airport would increase from 88 in 2012 to 118 by 2040. Counting tie-downs and hangar space, the Master Plan Update

predicted would be a need for 20 additional based aircraft spaces, but stated that additional tie-downs should be provided only if there was demonstrated demand.

Since the Master Plan Update was published, the Airport has seen a reduction in the amount of apron area available for General Aviation due to several reasons. The number and type of aircraft that use the Airport, known as the fleet mix, have been evolving over time. The Airport has seen an increase in the size of jets which resulted in a change of airplane design group from Group II to Group III. This has increased the required Taxiway Object Free Area width for Taxiway A from 131 feet to 186 feet. The additional Taxiway Object Free Area requirements have reduced the existing apron area by 27.5 feet along the entire length. This has resulted in a reduction of approximately 50,625 square feet of apron area.

The recent implementation of a no-taxi apron island across from Taxiway C has also resulted in a reduction of usable apron area because the apron now has to be devoted to a taxilane to navigate around the apron island. A new no-taxi apron island is also proposed at Taxiway D on the Southwest Ramp (in the Transient Tie-Down area, shown in Figure 1-2), which will result in three aircraft tie-downs being lost. The no-taxi apron island across from Taxiway B near the Southeast Ramp has also greatly reduced the capacity of the existing apron.

The construction of the new Aircraft Rescue and Fire Fighting building resulted in a designated fire lane from the building to Taxiway A, which prevents aircraft from parking in the vicinity. This resulted in a reduction of approximately 12,050 square feet of apron area. The new Airport Rescue and Fire Fighting building also displaced the General Aviation vehicle parking area. This resulted in approximately 13,500 square feet.

The operational use of commercial airlines, and the larger aircraft being utilized, resulted in a doubling of the existing Security Identification Display Area (SIDA). This resulted in a reduction of approximately 60,200 square feet of apron area for aircraft parking.

The net result of these changes is a loss of approximately 158,000 square feet of useable apron or apron-related space. It is estimated there is 556,000 square feet of actual apron pavement, but closer to 513,000 square feet of useable aircraft parking space. On busy weekends, the Airport has difficulty finding places for aircraft to park. This results in inefficient aircraft and ground equipment movements as aircraft are moved around the airfield and shuttled in and out of parking spaces. This in turn results in more fuel burn and more waiting time for crews and passengers. The Airport needs to replace the lost apron space and to improve the aircraft parking configuration.

The Airport estimates it needs to replace that lost apron area for parking and movement of aircraft to efficiently maintain the existing operations.

3 ALTERNATIVES ANALYSIS AND PROPOSED ACTION

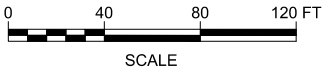
This chapter describes the alternatives considered for the proposed projects and documents the rationale for selecting the preferred alternatives. Included are summaries of each alternative's purpose, physical characteristics, benefits, principal environmental impacts, and rationale for selecting it as preferred or eliminating it from consideration. Impact avoidance, minimization, and mitigation are also summarized. More detail on these topics may be found in other chapters of this document.

NEPA requires consideration of a No-Build Alternative for each project. The No-Build Alternatives reflect conditions as they are expected to exist in the future if the Airport does not implement the proposed Projects. The No-Build scenarios assume there will be preventive or routine maintenance activities on existing infrastructure. They also take into consideration other ongoing Airport-sponsored projects. There are currently no other ongoing infrastructure projects at the Airport.

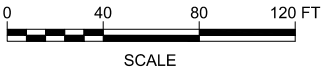
Project locations are shown in **Figure 2-1** and the alternatives are individually shown in **Figures 3-1 through 3-27**. New impervious surface area and temporary impact areas for Priority Habitat, non-Priority Habitat, and overall are listed in **Tables 3-1, 3-2 and 3-3**, respectively.



PREVIOUSLY DISTURBED LOT 38
SCALE: 1" = 40'

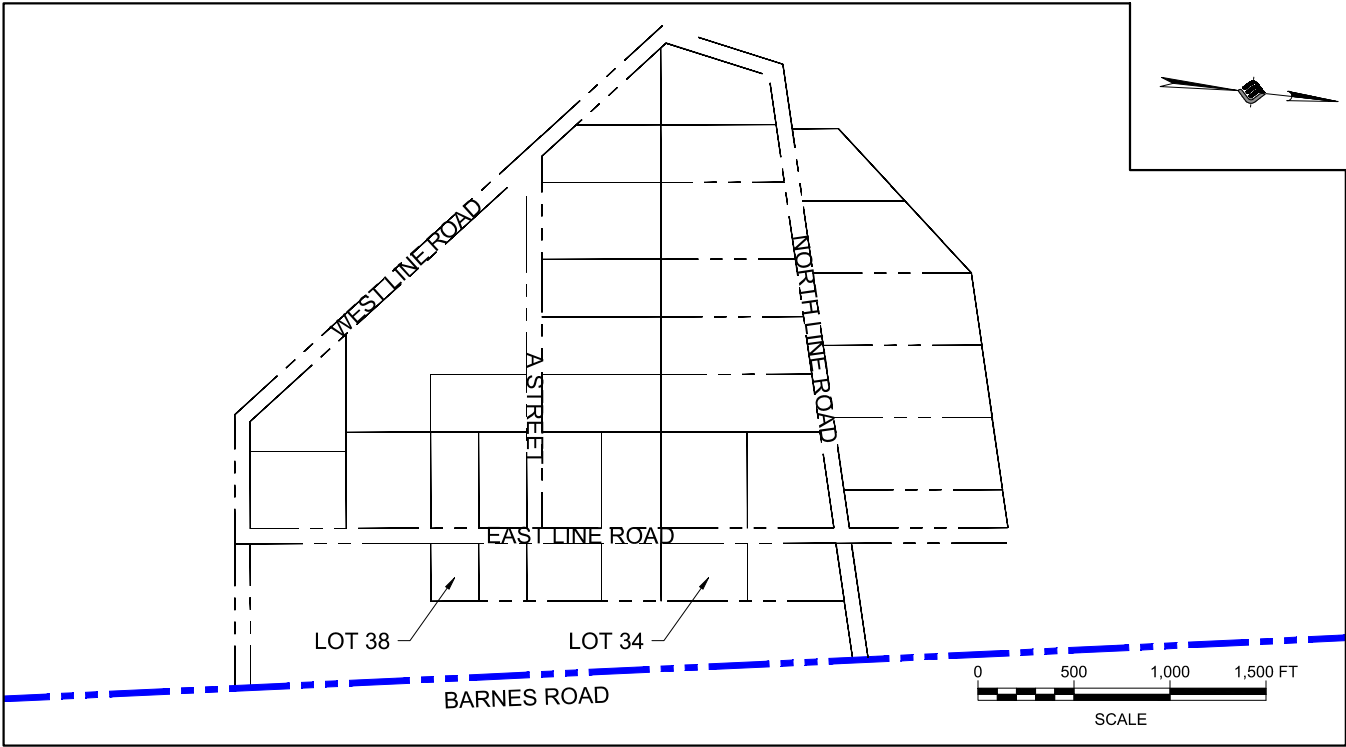


PREVIOUSLY DISTURBED LOT 34
SCALE: 1" = 40'

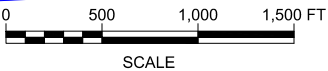


- LEGEND
- PRIORITY HABITAT
 - APPROXIMATE LIMITS OF LEASED PARCELS
 - APPROXIMATE AIRPORT PROPERTY LINE

- NOTES:
- AERIAL PHOTO TAKEN IN AUGUST, 2019 BY GEOPRO.
 - ASSUME 100% DISTURBANCE IN MAPPED PRIORITY HABITAT AREA WITHIN LOTS.



MVY BUSINESS PARK
SCALE: 1" = 500'



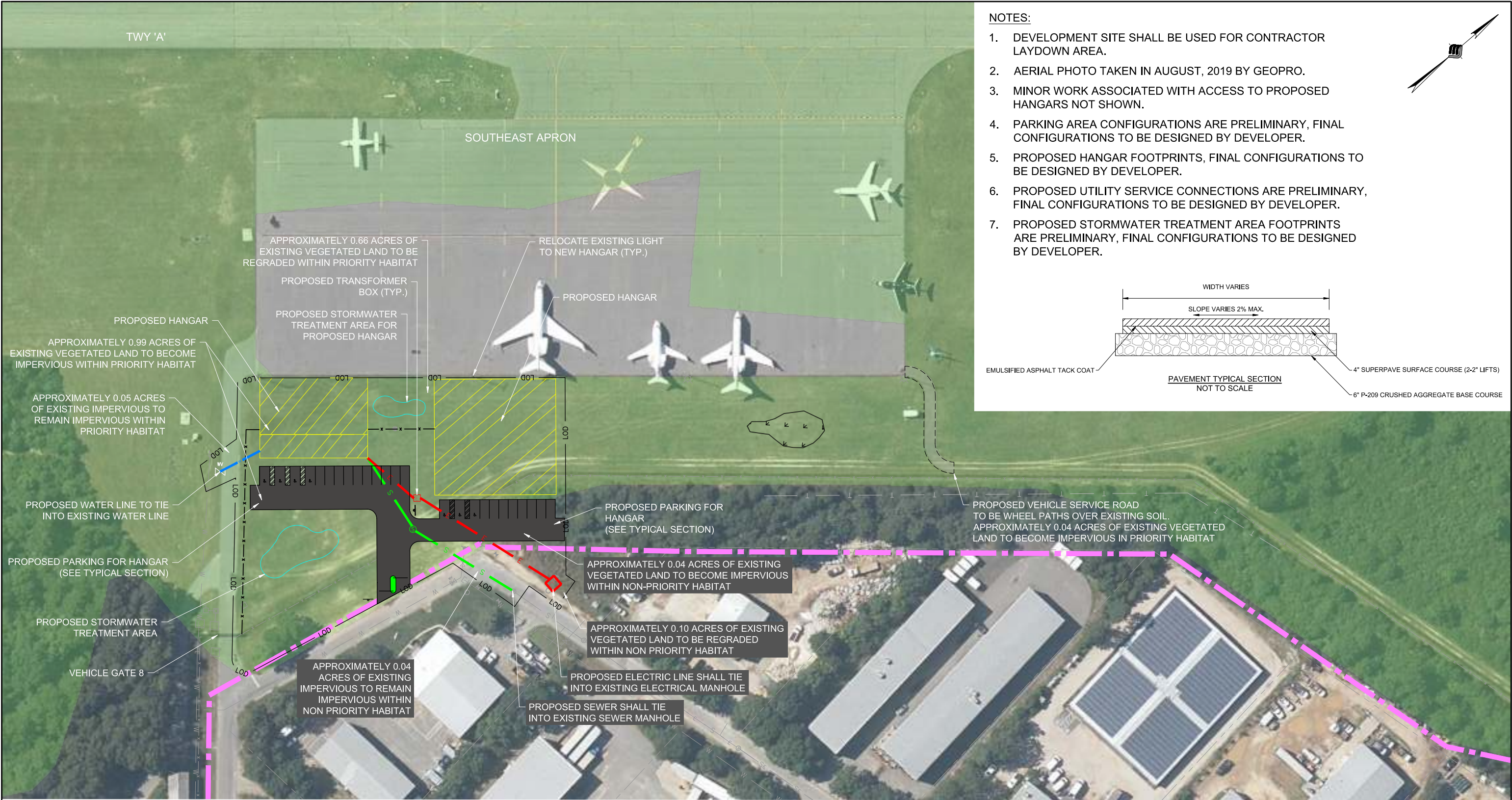
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**MARTHA'S VINEYARD AIRPORT
WEST TISBURY, MASSACHUSETTS
ENVIRONMENTAL IMPACT REPORT /
ENVIRONMENTAL ASSESSMENT
BUSINESS PARK LOTS 34 AND 38**

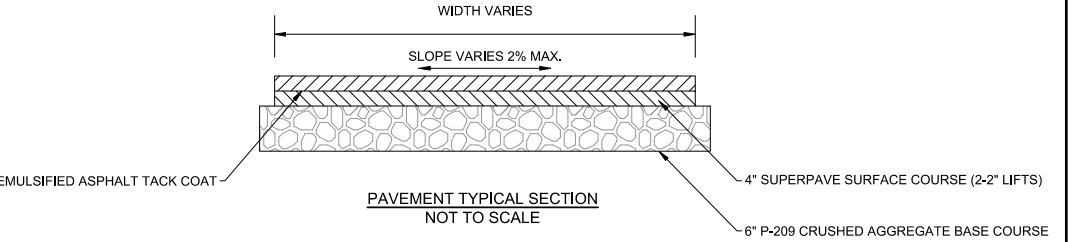
 **McFarland Johnson**
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

SCALE: AS SHOWN	DESIGN: SRS
DRAWN: SRS	PROJECT: 18226.07
CHECKED: MTO	DATE: NOVEMBER 2020



NOTES:

- 1. DEVELOPMENT SITE SHALL BE USED FOR CONTRACTOR LAYDOWN AREA.
- 2. AERIAL PHOTO TAKEN IN AUGUST, 2019 BY GEOPRO.
- 3. MINOR WORK ASSOCIATED WITH ACCESS TO PROPOSED HANGARS NOT SHOWN.
- 4. PARKING AREA CONFIGURATIONS ARE PRELIMINARY, FINAL CONFIGURATIONS TO BE DESIGNED BY DEVELOPER.
- 5. PROPOSED HANGAR FOOTPRINTS, FINAL CONFIGURATIONS TO BE DESIGNED BY DEVELOPER.
- 6. PROPOSED UTILITY SERVICE CONNECTIONS ARE PRELIMINARY, FINAL CONFIGURATIONS TO BE DESIGNED BY DEVELOPER.
- 7. PROPOSED STORMWATER TREATMENT AREA FOOTPRINTS ARE PRELIMINARY, FINAL CONFIGURATIONS TO BE DESIGNED BY DEVELOPER.



LEGEND

— LOD —	APPROXIMATE LIMIT OF DISTURBANCE		PROPOSED HANGAR
— x — x —	EXISTING SECURITY FENCE LINE	— x — x —	PROPOSED FENCE LINE
— — — — —	APPROXIMATE AIRPORT PROPERTY LINE	— S —	PROPOSED SEWER LINE
	PRIORITY HABITAT	— W —	PROPOSED WATER LINE
	PROPOSED LANDSCAPE	— E —	PROPOSED ELECTRIC LINE
	PROPOSED PAVEMENT	— — — — —	LAND RELEASE BOUNDARY
	RARE PLANT LOCATIONS		

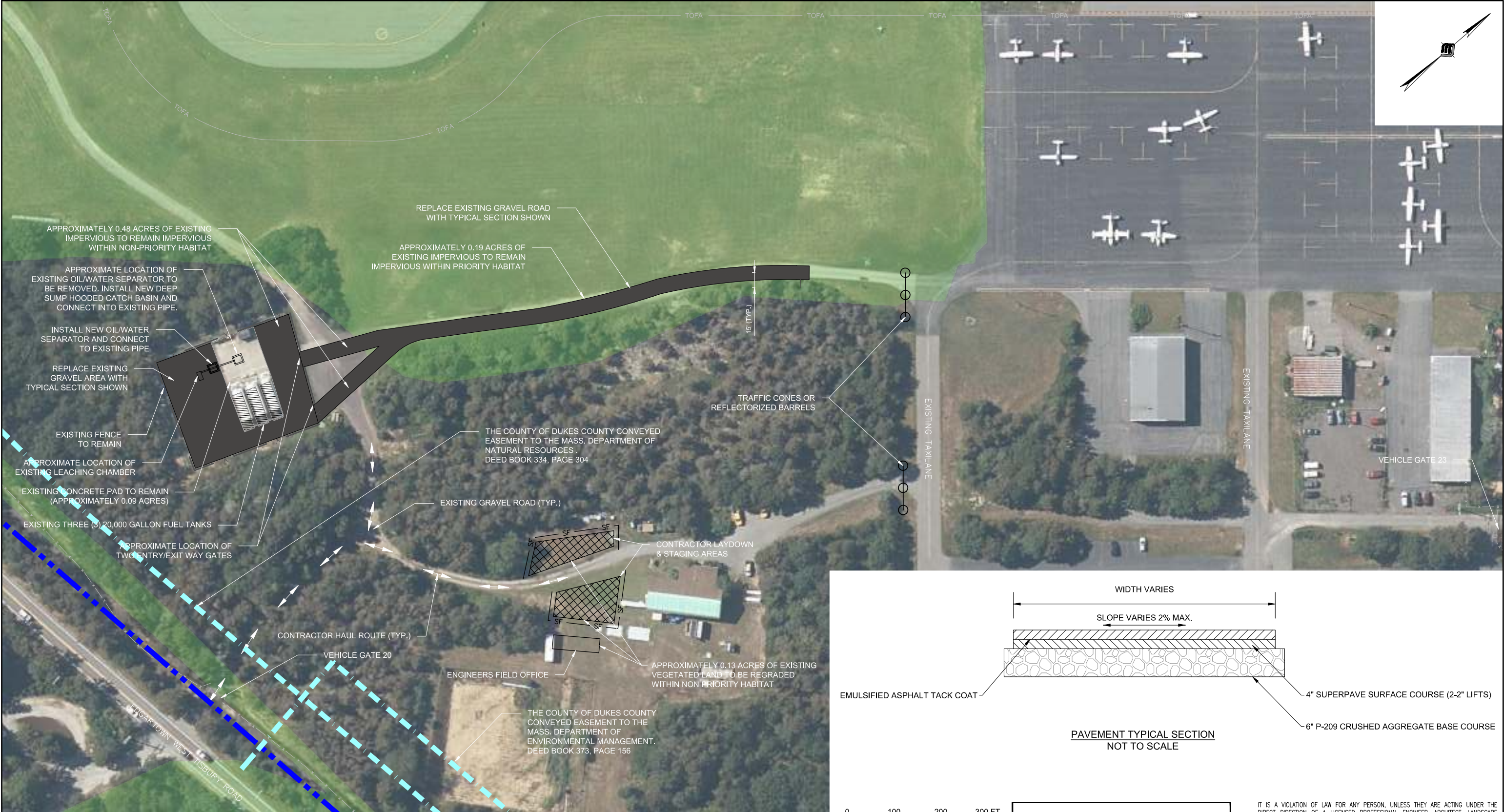
0 100 200 300 FT
SCALE

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MARTHA'S VINEYARD AIRPORT WEST TISBURY, MASSACHUSETTS ENVIRONMENTAL IMPACT REPORT / ENVIRONMENTAL ASSESSMENT AIRCRAFT HANGAR DEVELOPMENT			
REV	DATE	DESCRIPTION	BY
53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301			

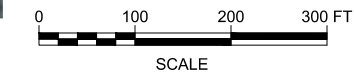
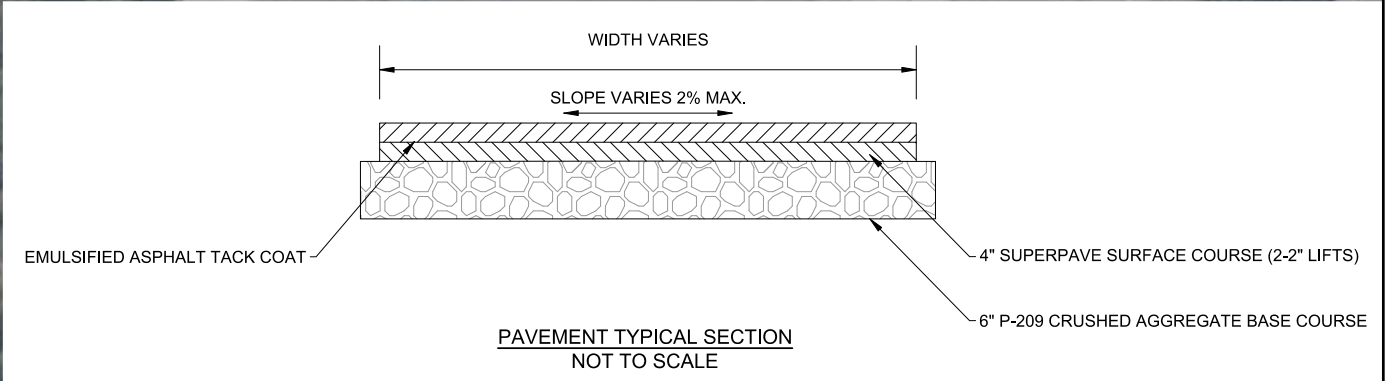
SCALE: 1" = 100'	DESIGN: SRS	3-2
DRAWN: SRS	PROJECT: 18226.07	
CHECKED: MTO	DATE: NOVEMBER 2020	



LEGEND


- PROPOSED PAVEMENT
- EXISTING FENCELINE
- APPROXIMATE AIRPORT PROPERTY LINE
- APPROXIMATE EASEMENT LINE
- PRIORITY HABITAT
- ESTIMATED HABITAT
- CONTRACTOR LAYDOWN AND STAGING AREA
- SILT FENCE

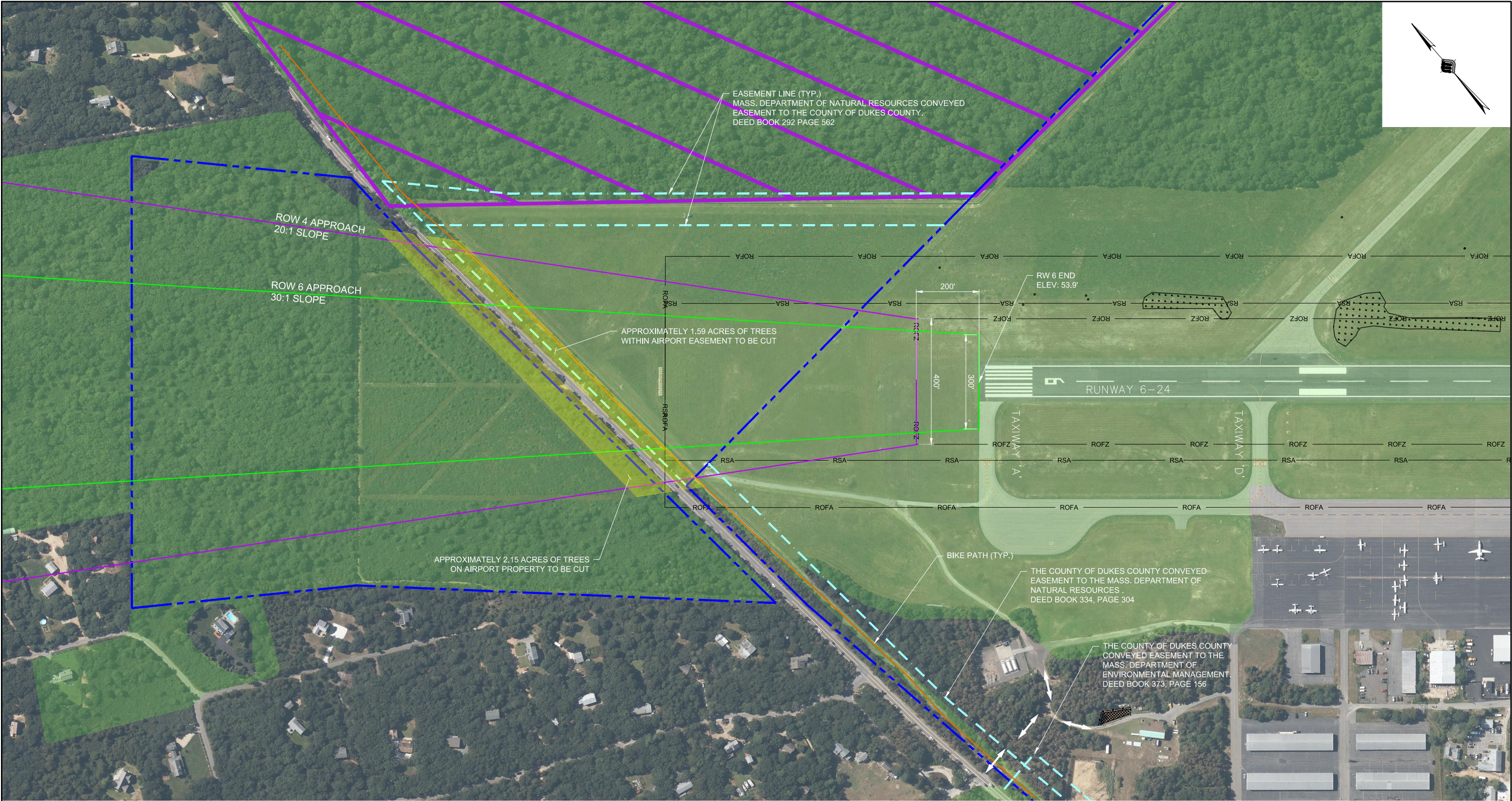
NOTES:
1. FUEL FARM PAD AND ACCESS ROAD LAYOUT DIGITIZED FROM AERIAL PHOTO. LOCATION ADJUSTED TO MATCH BASE PLANS PROVIDED BY OTHERS.
2. AERIAL PHOTO TAKEN IN AUGUST, 2019 BY GEOPRO.



DRAFT EIR/EA

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					MARTHA'S VINEYARD AIRPORT WEST TISBURY, MASSACHUSETTS ENVIRONMENTAL IMPACT REPORT / ENVIRONMENTAL ASSESSMENT				
	REV	DATE	DESCRIPTION		BY	IMPROVE FUEL FARM ACCESS AND SAFETY			
	<div>McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301</div>								
SCALE: 1" = 100'						DESIGN: SRS		3-3	
DRAWN: SRS						PROJECT:18226.07			
CHECKED: MTO		DATE: NOVEMBER 2020							



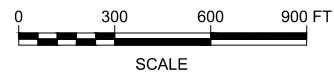
NOTES:

1. TREE PENETRATION DATA IS FROM AN AUGUST 2010 SURVEY COMPLETED BY JACOBS AND AUGUST 2019 SURVEY COMPLETED BY MCFARLAND JOHNSON.
2. TREE ELEVATIONS WERE COMPARED TO CRITICAL SURFACES OF THE RUNWAY APPROACHES TO DETERMINE CURRENT PENETRATIONS AND PENETRATIONS IN 10 YEARS. SURFACE INFORMATION IS IN FAA AC 150/5300-13A TABLE 3-2. APPROACH AND DEPARTURE STANDARDS TABLE: ROW 4, ROW 5 AND ROW 6.
3. PROPERTY BOUNDARIES AND INFORMATION PROVIDED BY NITSCH ENGINEERING BOUNDARY SURVEY DATED AUGUST 2013.

LEGEND

- | | |
|--|--------------------------------------|
| | PROPOSED PAVEMENT - NEW CONSTRUCTION |
| | LOD |
| | APPROXIMATE LIMIT OF DISTURBANCE |
| | TOFA |
| | TAXIWAY OBJECT FREE AREA |
| | RSA |
| | RUNWAY SAFETY AREA |
| | ROFA |
| | RUNWAY OBJECT FREE AREA |
| | ROFZ |
| | ROFZ |
| | RUNWAY OBJECT FREE ZONE |
| | PROPOSED TREE REMOVAL AREA |
| | CONTRACTOR LAYDOWN AND STAGING AREA |
| | RARE PLANT LOCATIONS |

- | | |
|--|------------------------------------|
| | PROPOSED PAVEMENT - RECONSTRUCTION |
| | APPROXIMATE AIRPORT PROPERTY LINE |
| | APPROXIMATE EASEMENT LINE |
| | EXISTING BIKE PATH |
| | PRIORITY HABITAT |
| | ESTIMATED HABITAT |
| | PROPOSED HAUL ROUTE |
| | EXISTING GRAVEL ROAD |



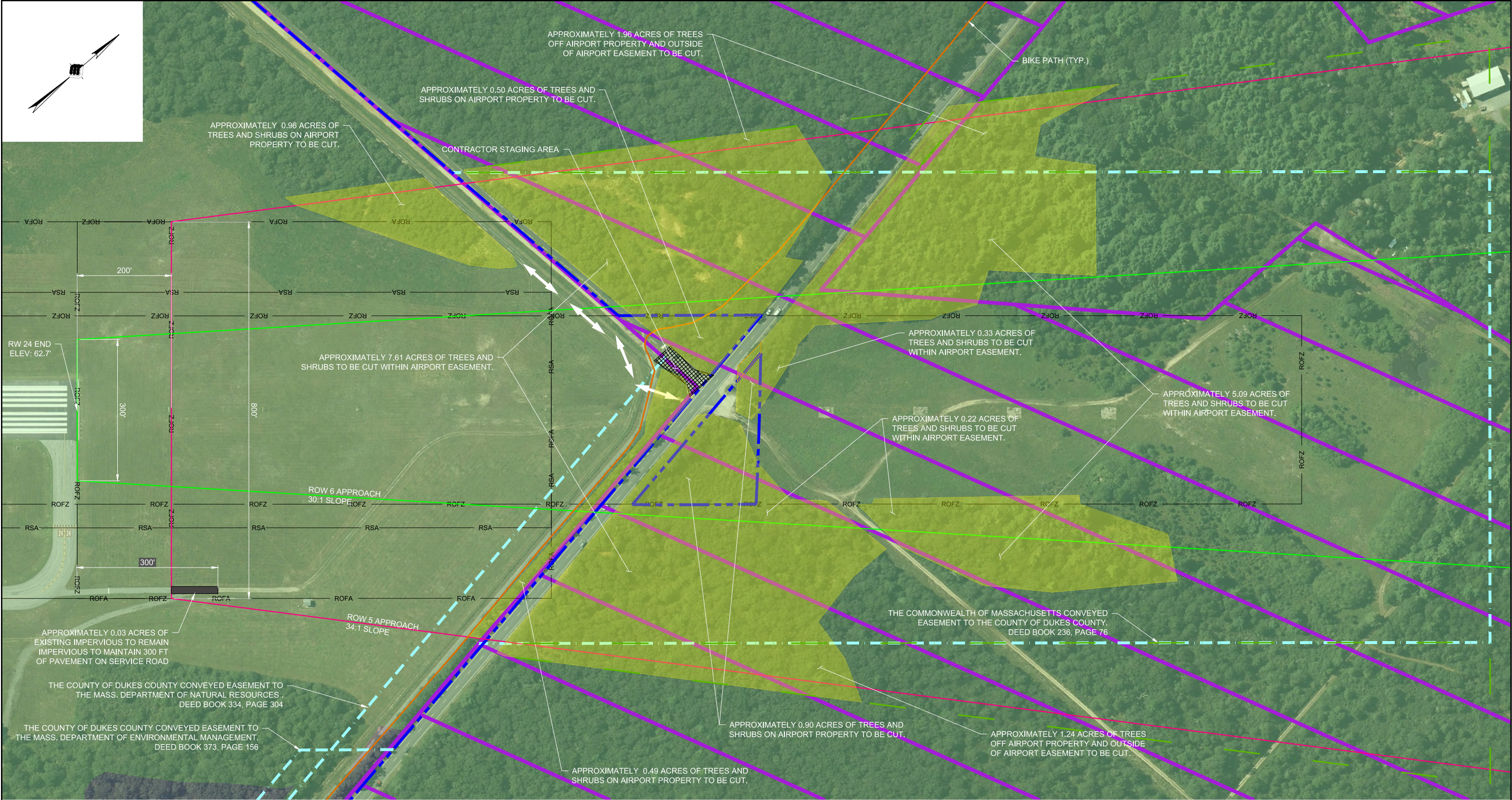
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**MARTHA'S VINEYARD AIRPORT
WEST TISBURY, MASSACHUSETTS
ENVIRONMENTAL IMPACT REPORT /
ENVIRONMENTAL ASSESSMENT
AIRSPACE VEGETATION MANAGEMENT -
RUNWAY 6**

SCALE: 1" = 300'	DESIGN: SRS	3-4
DRAWN: SRS	PROJECT: 18226.07	
CHECKED: MTO	DATE: NOVEMBER 2020	

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301



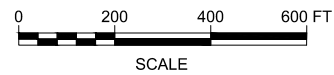
NOTES:

1. TREE PENETRATION DATA IS FROM AN AUGUST 2010 SURVEY COMPLETED BY JACOBS AND AUGUST 2019 SURVEY COMPLETED BY MCFARLAND JOHNSON.
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3. PROPERTY BOUNDARIES AND INFORMATION PROVIDED BY NITSCH ENGINEERING BOUNDARY SURVEY DATED AUGUST 2013.

LEGEND

- PROPOSED PAVEMENT - NEW CONSTRUCTION
- LOD ——— APPROXIMATE LIMIT OF DISTURBANCE
- TOFA ——— TAXIWAY OBJECT FREE AREA
- RSA ——— RUNWAY SAFETY AREA
- ROFA ——— RUNWAY OBJECT FREE AREA
- ROFZ ——— RUNWAY OBJECT FREE ZONE
- PROPOSED TREE REMOVAL AREA
- CONTRACTOR LAYDOWN AND STAGING AREA
- RARE PLANT LOCATIONS

- PROPOSED PAVEMENT - RECONSTRUCTION
- APPROXIMATE AIRPORT PROPERTY LINE
- APPROXIMATE EASEMENT LINE
- POTENTIAL FUTURE EASEMENT LINE
- EXISTING BIKE PATH
- PRIORITY HABITAT
- ESTIMATED HABITAT
- PROPOSED HAUL ROUTE
- EXISTING GRAVEL ROAD



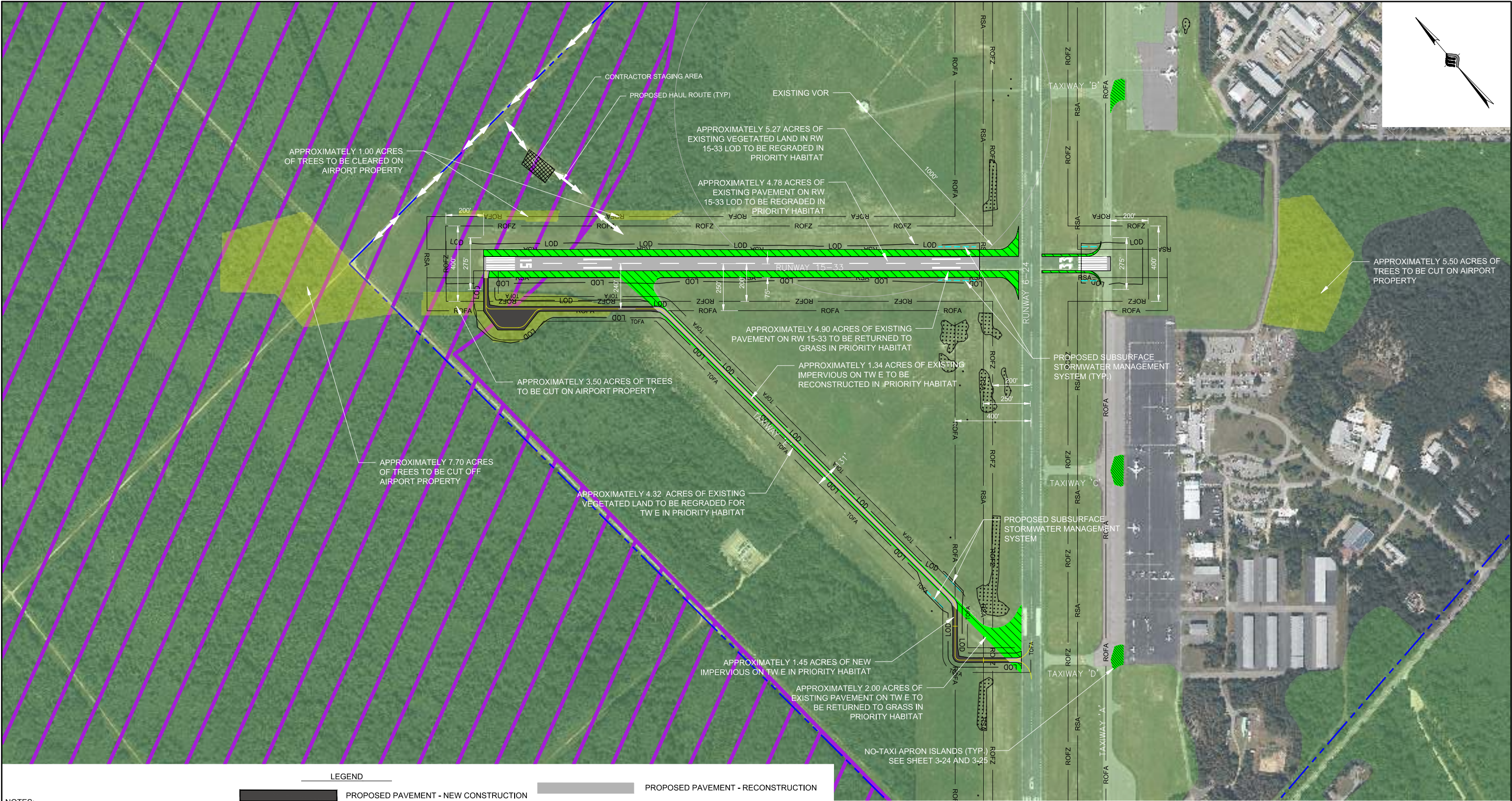
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MARTHA'S VINEYARD AIRPORT
WEST TISBURY, MASSACHUSETTS
ENVIRONMENTAL IMPACT REPORT /
ENVIRONMENTAL ASSESSMENT
AIRSPACE VEGETATION MANAGEMENT -
RUNWAY 24

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

SCALE: 1" = 200'	DESIGN: SRS	3-5
DRAWN: SRS	PROJECT: 18226.07	
CHECKED: MTO	DATE: NOVEMBER 2020	



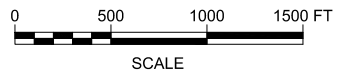
NOTES:

1. TREE PENETRATION DATA IS FROM AN AUGUST 2012 SURVEY COMPLETED BY JACOBS AND AUGUST 2019 SURVEY COMPLETED BY MCFARLAND JOHNSON.
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3. TW E WAS DESIGNED BASED OF AN ADG 2 AND TDG 1A, WITH A 25' WIDTH OF PAVEMENT AND 131' TOFA.
4. PROPERTY BOUNDARIES AND INFORMATION PROVIDED BY NITSCH ENGINEERING BOUNDARY SURVEY DATED AUGUST 2013.

LEGEND

- PROPOSED PAVEMENT - NEW CONSTRUCTION
- LOD
- TOFA
- EXISTING PAVEMENT TO BECOME VEGETATED LAND
- RSA
- ROFA
- ROFZ
- PROPOSED TREE CLEARING AREA
- CONTRACTOR STAGING AREA
- RARE PLANT LOCATIONS
- APPROXIMATE LIMIT OF DISTURBANCE
- TAXIWAY OBJECT FREE AREA
- RUNWAY SAFETY AREA
- RUNWAY OBJECT FREE AREA
- RUNWAY OBJECT FREE ZONE

- PROPOSED PAVEMENT - RECONSTRUCTION
- APPROXIMATE AIRPORT PROPERTY LINE
- PRIORITY HABITAT
- ESTIMATED HABITAT
- PROPOSED HAUL ROUTE
- EXISTING GRAVEL ROAD
- PROPOSED STORMWATER MANAGEMENT



DRAFT EIR/EA

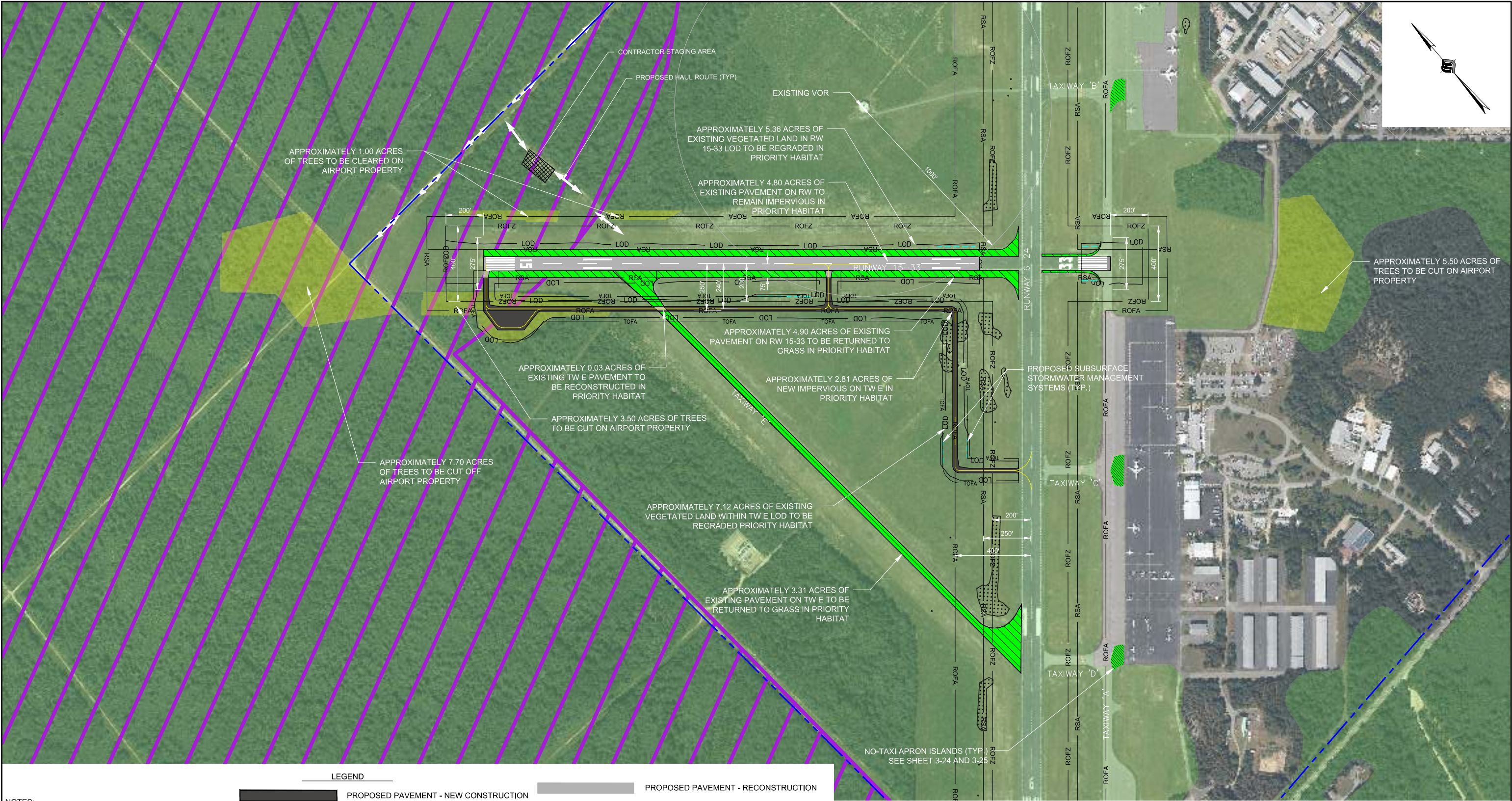
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MARTHA'S VINEYARD AIRPORT
WEST TISBURY, MASSACHUSETTS
ENVIRONMENTAL IMPACT REPORT /
ENVIRONMENTAL ASSESSMENT

RW15-33 AND TW E ALT 5-1A -
MAINTAIN EXISTING THRESHOLDS &
CONSTRUCT PARTIAL PARALLEL TW E

SCALE: 1" = 500'	DESIGN: SRS	3-6
DRAWN: SRS	PROJECT: 18226.07	
CHECKED: MTO	DATE: NOVEMBER 2020	

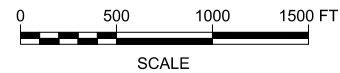
McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301



NOTES:

1. TREE PENETRATION DATA IS FROM AN AUGUST 2012 SURVEY COMPLETED BY JACOBS AND AUGUST 2019 SURVEY COMPLETED BY MCFARLAND JOHNSON.
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4. PROPERTY BOUNDARIES AND INFORMATION PROVIDED BY NITSCH ENGINEERING BOUNDARY SURVEY DATED AUGUST 2013.

LEGEND	
	PROPOSED PAVEMENT - NEW CONSTRUCTION
	PROPOSED PAVEMENT - RECONSTRUCTION
	APPROXIMATE AIRPORT PROPERTY LINE
	PRIORITY HABITAT
	ESTIMATED HABITAT
	PROPOSED HAUL ROUTE
	EXISTING GRAVEL ROAD
	PROPOSED STORMWATER MANAGEMENT
	LOD
	TOFA
	EXISTING LIMIT OF DISTURBANCE
	TAXIWAY OBJECT FREE AREA
	EXISTING PAVEMENT TO BECOME VEGETATED LAND
	RSA
	RUNWAY SAFETY AREA
	ROFA
	RUNWAY OBJECT FREE AREA
	ROFZ
	ROFZ
	RUNWAY OBJECT FREE ZONE
	PROPOSED TREE CLEARING AREA
	CONTRACTOR STAGING AREA
	RARE PLANT LOCATIONS



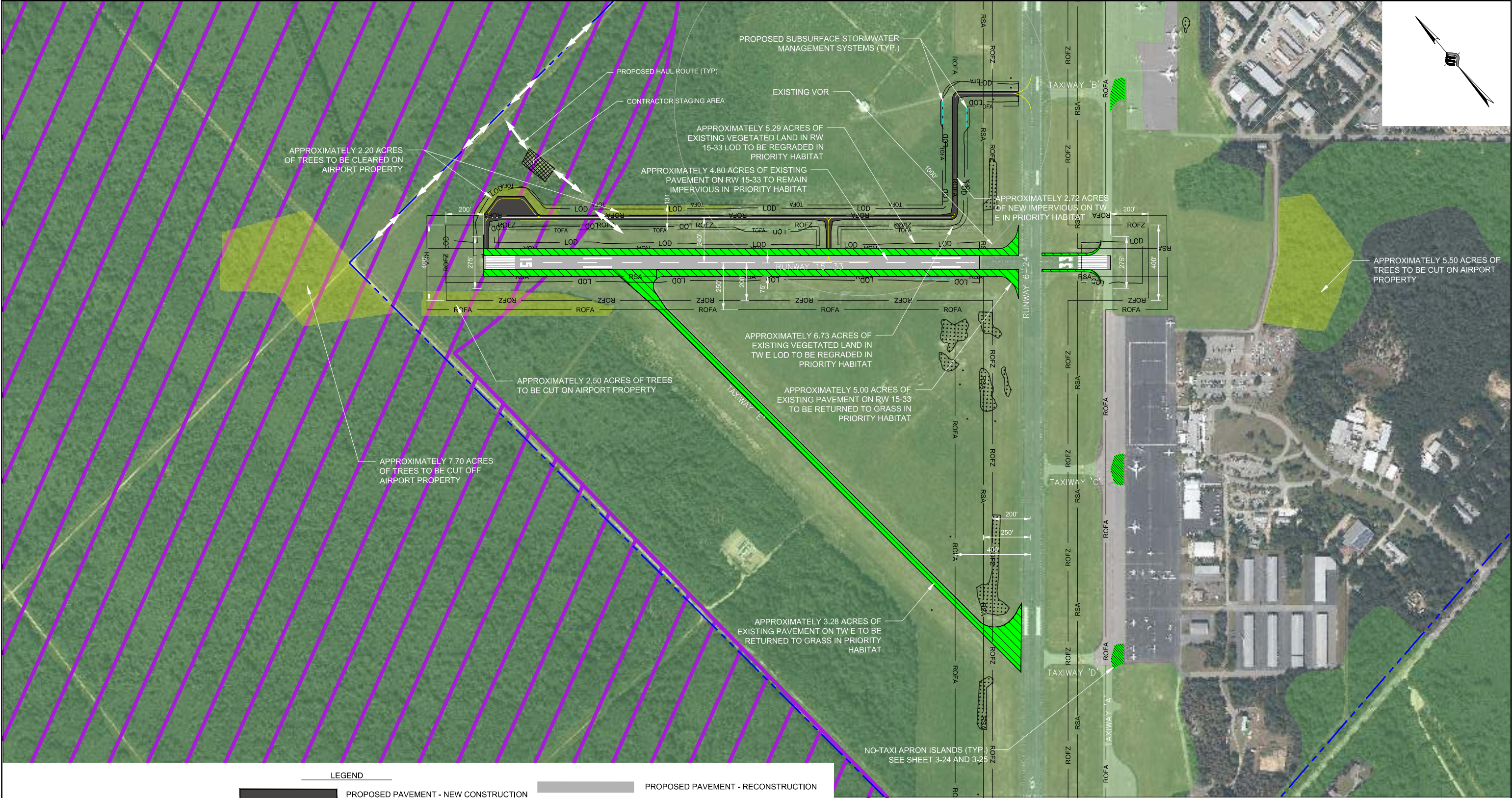
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MARTHA'S VINEYARD AIRPORT WEST TISBURY, MASSACHUSETTS ENVIRONMENTAL IMPACT REPORT / ENVIRONMENTAL ASSESSMENT			
RW15-33 AND TW E ALT 5-1B - MAINTAIN EXISTING THRESHOLDS & CONSTRUCT SOUTH PARALLEL TW E			
SCALE: 1" = 500'	DESIGN: SRS	3-7	
DRAWN: SRS	PROJECT:18226.07		
CHECKED: MTO	DATE: NOVEMBER 2020		



McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

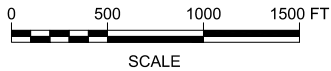


NOTES:

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LEGEND

	PROPOSED PAVEMENT - NEW CONSTRUCTION		PROPOSED PAVEMENT - RECONSTRUCTION
	APPROXIMATE LIMIT OF DISTURBANCE		APPROXIMATE AIRPORT PROPERTY LINE
	LOD		PRIORITY HABITAT
	TOFA		ESTIMATED HABITAT
	EXISTING PAVEMENT TO BECOME VEGETATED LAND		PROPOSED HAUL ROUTE
	RSA		EXISTING GRAVEL ROAD
	ROFA		PROPOSED STORMWATER MANAGEMENT
	ROFZ		
	PROPOSED TREE CLEARING AREA		
	CONTRACTOR STAGING AREA		
	RARE PLANT LOCATIONS		



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MARTHA'S VINEYARD AIRPORT
WEST TISBURY, MASSACHUSETTS
ENVIRONMENTAL IMPACT REPORT /
ENVIRONMENTAL ASSESSMENT

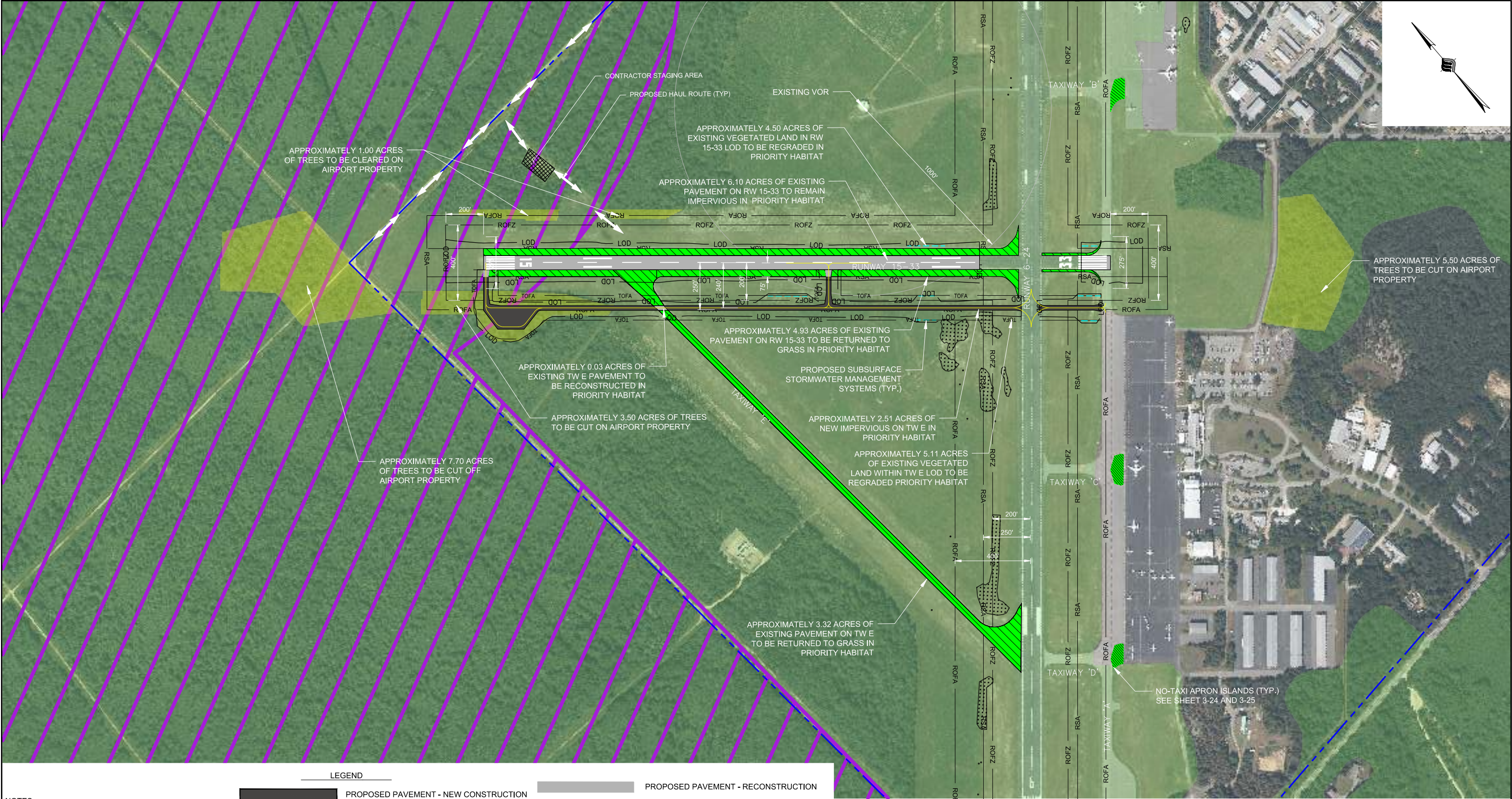
RW15-33 AND TW E ALT 5-1C -
MAINTAIN EXISTING THRESHOLDS &
CONSTRUCT NORTH PARALLEL TW E

SCALE: 1" = 500'	DESIGN: SRS	3-8
DRAWN: SRS	PROJECT:18226.07	
CHECKED: MTO	DATE: NOVEMBER 2020	



McFarland Johnson

53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301



NOTES:

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LEGEND	
	PROPOSED PAVEMENT - NEW CONSTRUCTION
	PROPOSED PAVEMENT - RECONSTRUCTION
	APPROXIMATE AIRPORT PROPERTY LINE
	PRIORITY HABITAT
	ESTIMATED HABITAT
	PROPOSED HAUL ROUTE
	EXISTING GRAVEL ROAD
	PROPOSED STORMWATER MANAGEMENT
	LOD
	TOFA
	RSA
	ROFA
	ROFZ
	PROPOSED TREE CLEARING AREA
	CONTRACTOR STAGING AREA
	RARE PLANT LOCATIONS
	APPROXIMATE LIMIT OF DISTURBANCE
	TAXIWAY OBJECT FREE AREA
	EXISTING PAVEMENT TO BECOME VEGETATED LAND
	RUNWAY SAFETY AREA
	RUNWAY OBJECT FREE AREA
	RUNWAY OBJECT FREE ZONE



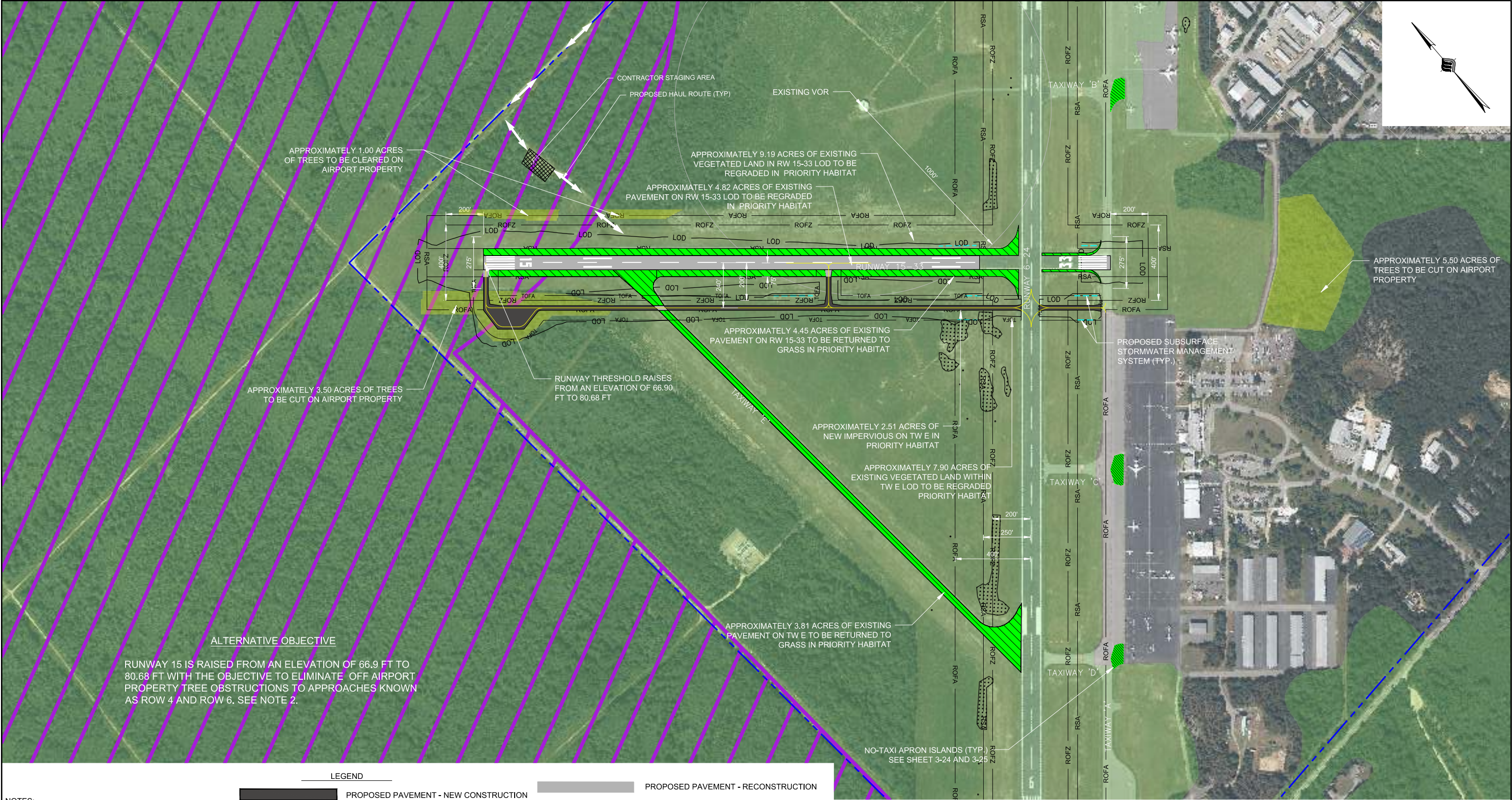
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MARTHA'S VINEYARD AIRPORT WEST TISBURY, MASSACHUSETTS ENVIRONMENTAL IMPACT REPORT / ENVIRONMENTAL ASSESSMENT			
RW15-33 AND TW E ALT 5-1D - MAINTAIN EXISTING THRESHOLDS & CONSTRUCT FULL PARALLEL TW E			
SCALE: 1" = 500'	DESIGN: SRS	3-9	
DRAWN: SRS	PROJECT:18226.07		
CHECKED: MTO	DATE: NOVEMBER 2020		



McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301



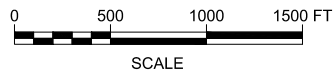
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1. TREE PENETRATION DATA IS FROM AN AUGUST 2012 SURVEY COMPLETED BY JACOBS AND AUGUST 2019 SURVEY COMPLETED BY MCFARLAND JOHNSON.
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4. PROPERTY BOUNDARIES AND INFORMATION PROVIDED BY NITSCH ENGINEERING BOUNDARY SURVEY DATED AUGUST 2013.

LEGEND

- | | |
|--|--|
| | PROPOSED PAVEMENT - NEW CONSTRUCTION |
| | APPROXIMATE LIMIT OF DISTURBANCE |
| | TAXIWAY OBJECT FREE AREA |
| | EXISTING PAVEMENT TO BECOME VEGETATED LAND |
| | RSA |
| | TOFA |
| | ROFA |
| | ROFZ |
| | PROPOSED TREE CLEARING AREA |
| | CONTRACTOR STAGING AREA |
| | RARE PLANT LOCATIONS |

- | | |
|--|------------------------------------|
| | PROPOSED PAVEMENT - RECONSTRUCTION |
| | APPROXIMATE AIRPORT PROPERTY LINE |
| | PRIORITY HABITAT |
| | ESTIMATED HABITAT |
| | PROPOSED HAUL ROUTE |
| | EXISTING GRAVEL ROAD |
| | PROPOSED STORMWATER MANAGEMENT |



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MARTHA'S VINEYARD AIRPORT
WEST TISBURY, MASSACHUSETTS
ENVIRONMENTAL IMPACT REPORT /
ENVIRONMENTAL ASSESSMENT

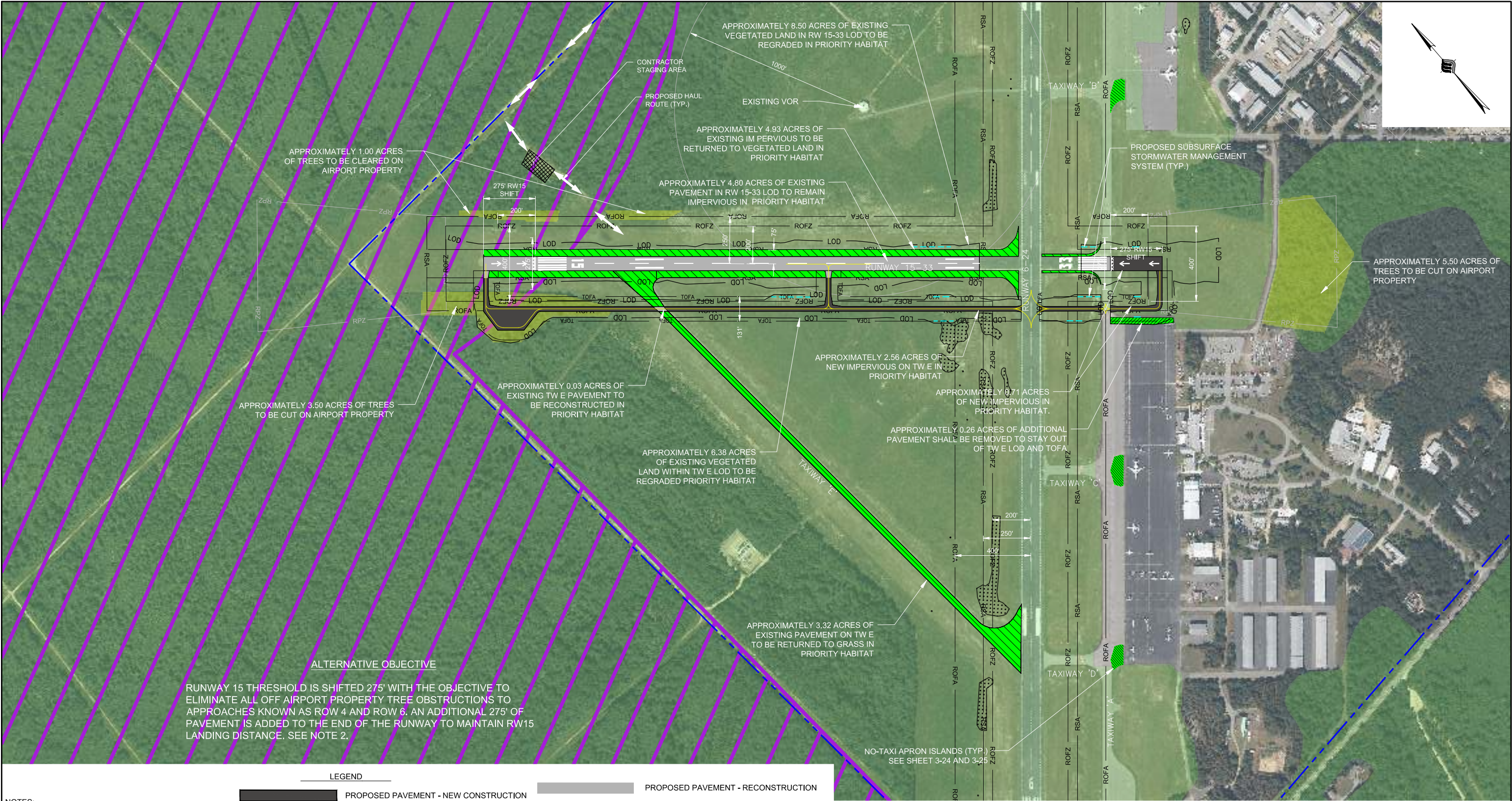
RW15-33 AND TW E ALT 5-2 - MAINTAIN
EXISTING THRESHOLDS, RAISE RW 15
END & CONSTRUCT FULL PARALLEL TW E

SCALE: 1" = 500'	DESIGN: SRS	3-10
DRAWN: SRS	PROJECT: 18226.07	
CHECKED: MTO	DATE: NOVEMBER 2020	



McFarland Johnson

53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301



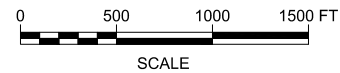
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LEGEND

- PROPOSED PAVEMENT - NEW CONSTRUCTION
- LOD ——— APPROXIMATE LIMIT OF DISTURBANCE
- TOFA ——— TAXIWAY OBJECT FREE AREA
- EXISTING PAVEMENT TO BECOME VEGETATED LAND
- RSA ——— RUNWAY SAFETY AREA
- ROFA ——— RUNWAY OBJECT FREE AREA
- ROFZ ——— RUNWAY OBJECT FREE ZONE
- PROPOSED TREE CLEARING AREA
- CONTRACTOR STAGING AREA
- RARE PLANT LOCATIONS

- PROPOSED PAVEMENT - RECONSTRUCTION
- APPROXIMATE AIRPORT PROPERTY LINE
- PRIORITY HABITAT
- ESTIMATED HABITAT
- PROPOSED HAUL ROUTE
- EXISTING GRAVEL ROAD
- PROPOSED STORMWATER MANAGEMENT



DRAFT EIR/EA

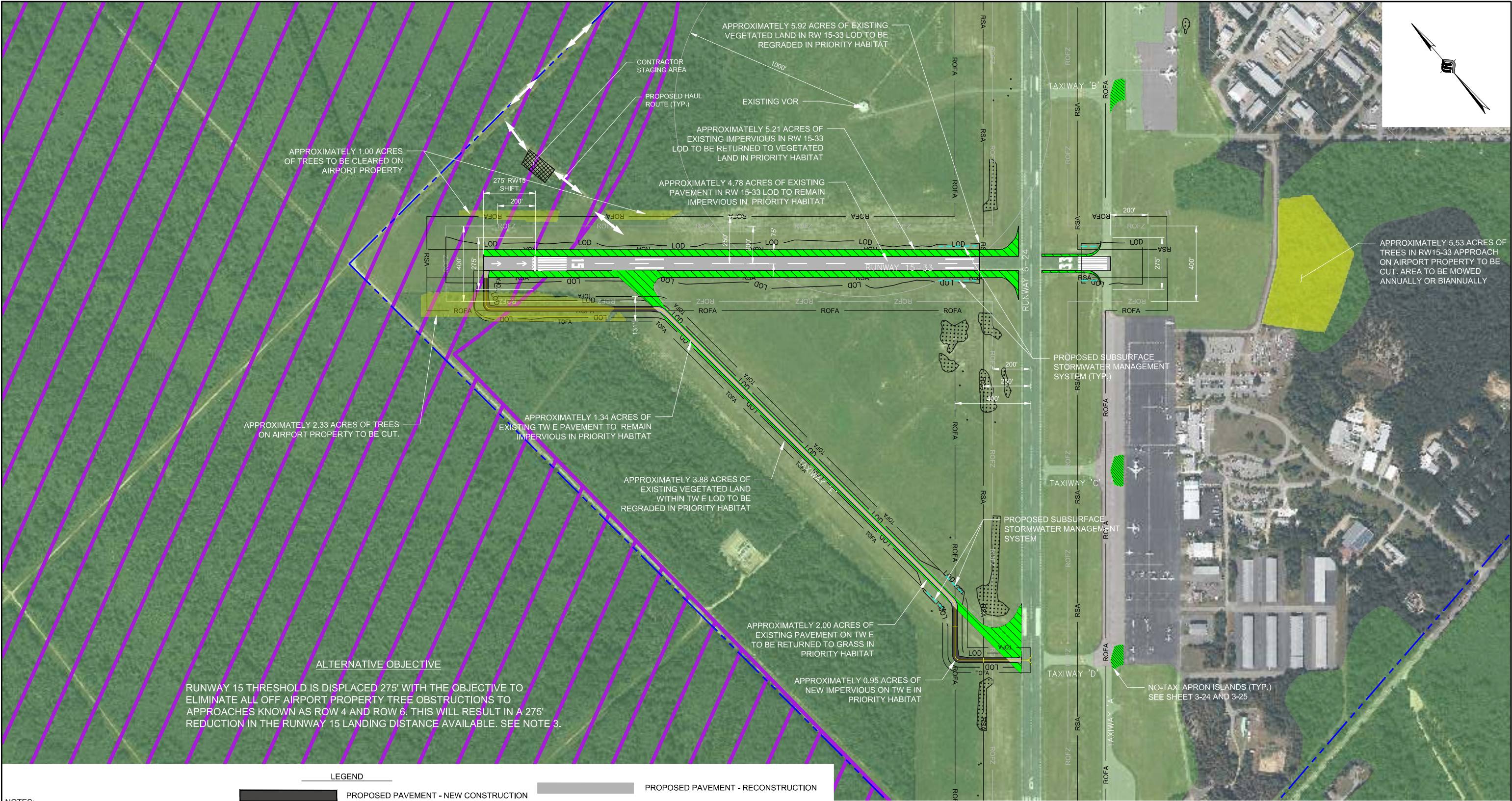
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MARTHA'S VINEYARD AIRPORT
WEST TISBURY, MASSACHUSETTS
ENVIRONMENTAL IMPACT REPORT /
ENVIRONMENTAL ASSESSMENT

RW15-33 AND TW E ALT 5-3 - DISPLACE
RW 15-33 THRESHOLD 275', &
CONSTRUCT FULL PARALLEL TW E

SCALE: 1" = 500'	DESIGN: SRS	3-11
DRAWN: SRS	PROJECT: 18226.07	
CHECKED: MTO	DATE: NOVEMBER 2020	

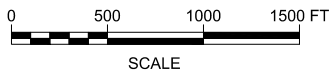
McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301



NOTES:

1. TREE PENETRATION DATA IS FROM AN AUGUST 2012 SURVEY COMPLETED BY JACOBS AND AUGUST 2019 SURVEY COMPLETED BY MCFARLAND JOHNSON.
2. TREE ELEVATIONS WERE COMPARED TO CRITICAL SURFACES OF THE RUNWAY APPROACHES TO DETERMINE CURRENT PENETRATIONS. SURFACE INFORMATION IS IN FAA AC 150/5300-13A TABLE 3-2. APPROACH AND DEPARTURE STANDARDS TABLE: ROW 4, ROW 5 AND ROW 6.
3. TW E WAS DESIGNED BASED OF AN ADG 2 AND TDG 1A, WITH A 25' WIDTH OF PAVEMENT AND 131' TOFA.
4. PROPERTY BOUNDARIES AND INFORMATION PROVIDED BY NITSCH ENGINEERING BOUNDARY SURVEY DATED AUGUST 2013.

LEGEND	
	PROPOSED PAVEMENT - NEW CONSTRUCTION
	PROPOSED PAVEMENT - RECONSTRUCTION
	APPROXIMATE AIRPORT PROPERTY LINE
	PRIORITY HABITAT
	ESTIMATED HABITAT
	PROPOSED HAUL ROUTE
	EXISTING GRAVEL ROAD
	PROPOSED STORMWATER MANAGEMENT
	APPROXIMATE LIMIT OF DISTURBANCE
	TAXIWAY OBJECT FREE AREA
	EXISTING PAVEMENT TO BECOME VEGETATED LAND
	CONTRACTOR STAGING AREA
	RARE PLANT LOCATIONS
	LOD
	TOFA
	RSA
	ROFA
	ROFZ
	ROFZ
	PROPOSED TREE CLEARING AREA
	PROPOSED STORMWATER MANAGEMENT

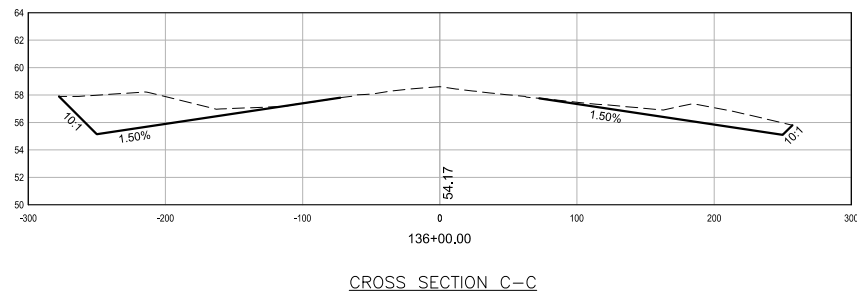
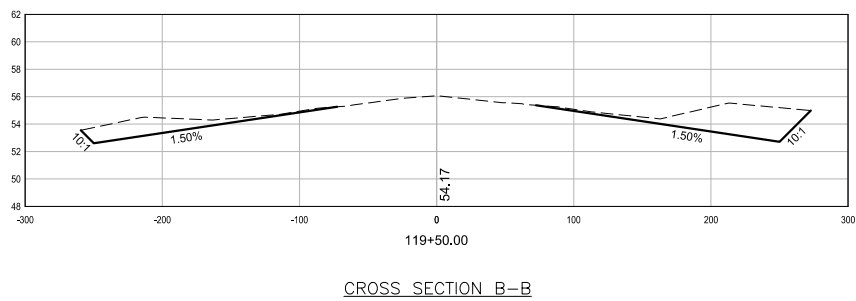
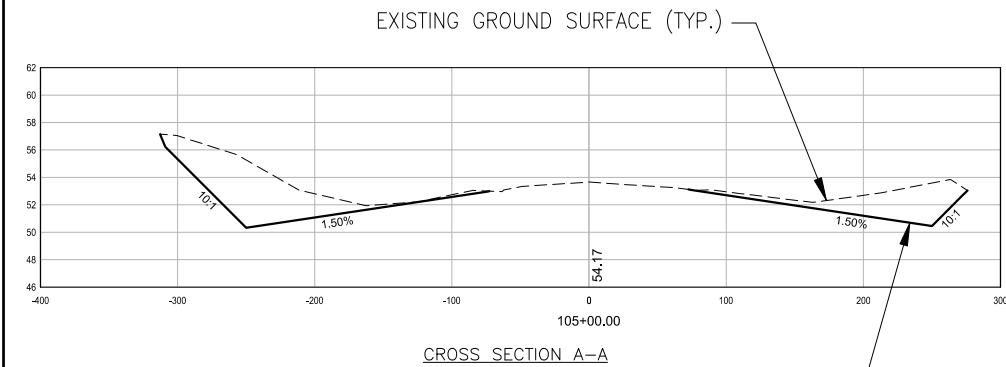
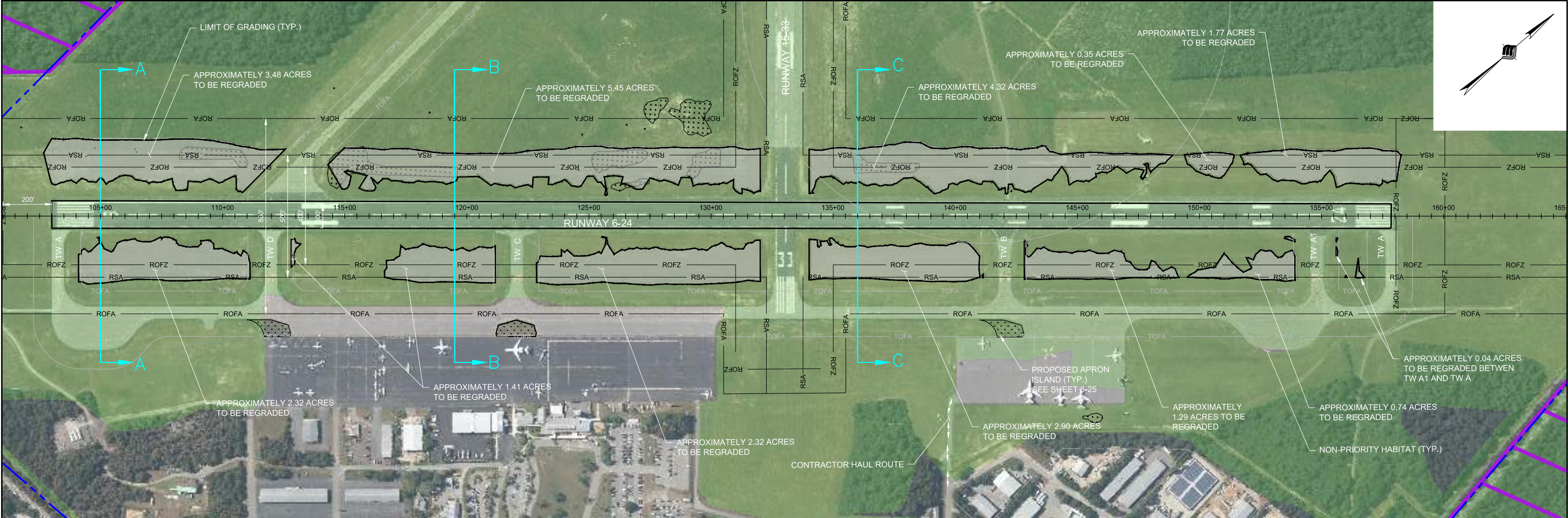


DRAFT EIR/EA

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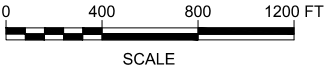
MARTHA'S VINEYARD AIRPORT WEST TISBURY, MASSACHUSETTS ENVIRONMENTAL IMPACT REPORT / ENVIRONMENTAL ASSESSMENT			
RW15-33 AND TW E ALT 5-5 - DISPLACE RW15 THRESHOLD BY 275' & CONSTRUCT PARTIAL PARALLEL TW E			
SCALE: ----	DESIGN: SRS	3-13	
DRAWN: SRS	PROJECT: 18226.07		
CHECKED: MTO	DATE: NOVEMBER 2020		

 **McFarland Johnson**
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301



- LEGEND**
- ESTIMATED HABITAT
 - LIMIT OF TEMPORARY DISTURBANCE
 - RSA RUNWAY SAFETY AREA
 - ROFZ RUNWAY OBJECT FREE ZONE
 - ROFA RUNWAY OBJECT FREE AREA
 - APPROXIMATE AIRPORT PROPERTY LINE
 - PRIORITY HABITAT
 - RARE PLANT LOCATIONS

- NOTES:**
1. SURVEY DATA IS A COMBINATION OF A SURVEY FROM BRYANT ASSOCIATES DATED FEBRUARY 2018 AND GIS DATA FROM THE USGS GIS WEBSITE.
 2. RUNWAY SAFETY AREA IS BASED ON AN AIRPORT DESIGN GROUP OF C-III. THE SAFETY AREA TOTAL WIDTH IS 500'.
 3. FAA AC 150/5300-13A WAS USED TO DETERMINE THE GRADES OF THE RUNWAY SAFETY AREA.
 4. RUNWAY SAFETY ELEVATIONS WERE DETERMINED USING EXISTING CENTERLINE ELEVATIONS EVERY 50'.



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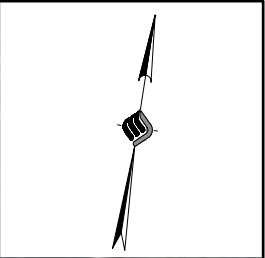
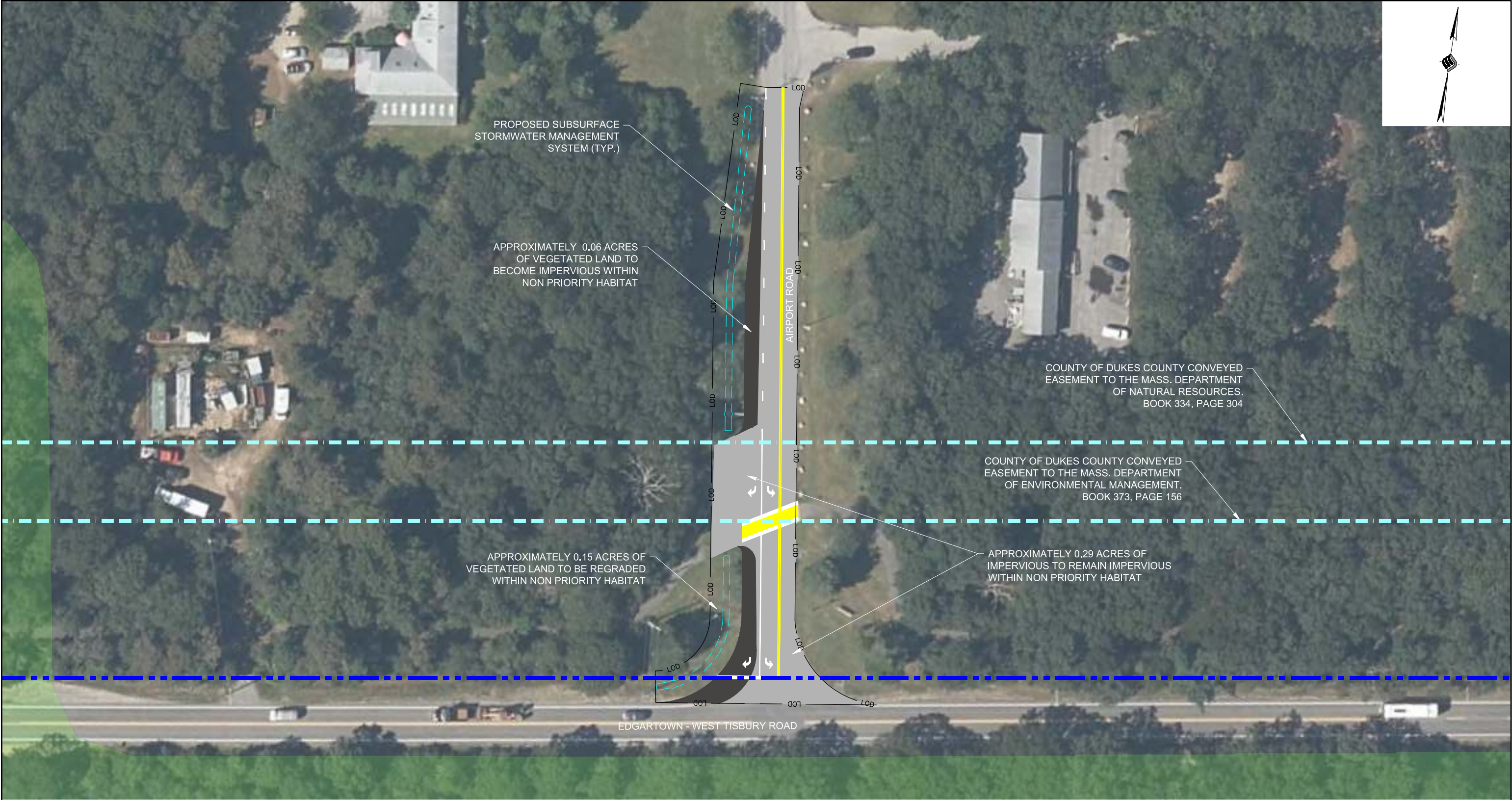
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**MARTHA'S VINEYARD AIRPORT
WEST TISBURY, MASSACHUSETTS
ENVIRONMENTAL IMPACT REPORT /
ENVIRONMENTAL ASSESSMENT**

**REGRADE RUNWAY 6-24
SIDE SAFETY AREAS**

SCALE: AS SHOWN	DESIGN: SRS	3-14 1 ----
DRAWN: SRS	PROJECT: 18226.07	
CHECKED: MTO	DATE: NOVEMBER 2020	

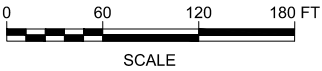
McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301



- LEGEND**
- LOD ——— APPROXIMATE LIMIT OF DISTURBANCE
 - — — — — APPROXIMATE AIRPORT PROPERTY LINE
 - PRIORITY HABITAT
 - PROPOSED PAVEMENT — NEW CONSTRUCTION
 - PROPOSED PAVEMENT — RECONSTRUCTION
 - APPROXIMATE DEPARTMENT OF CONSERVATION EASEMENT LINE
 - PROPOSED STORMWATER MANAGEMENT


NOTES:

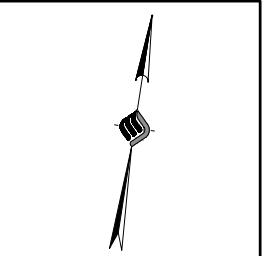
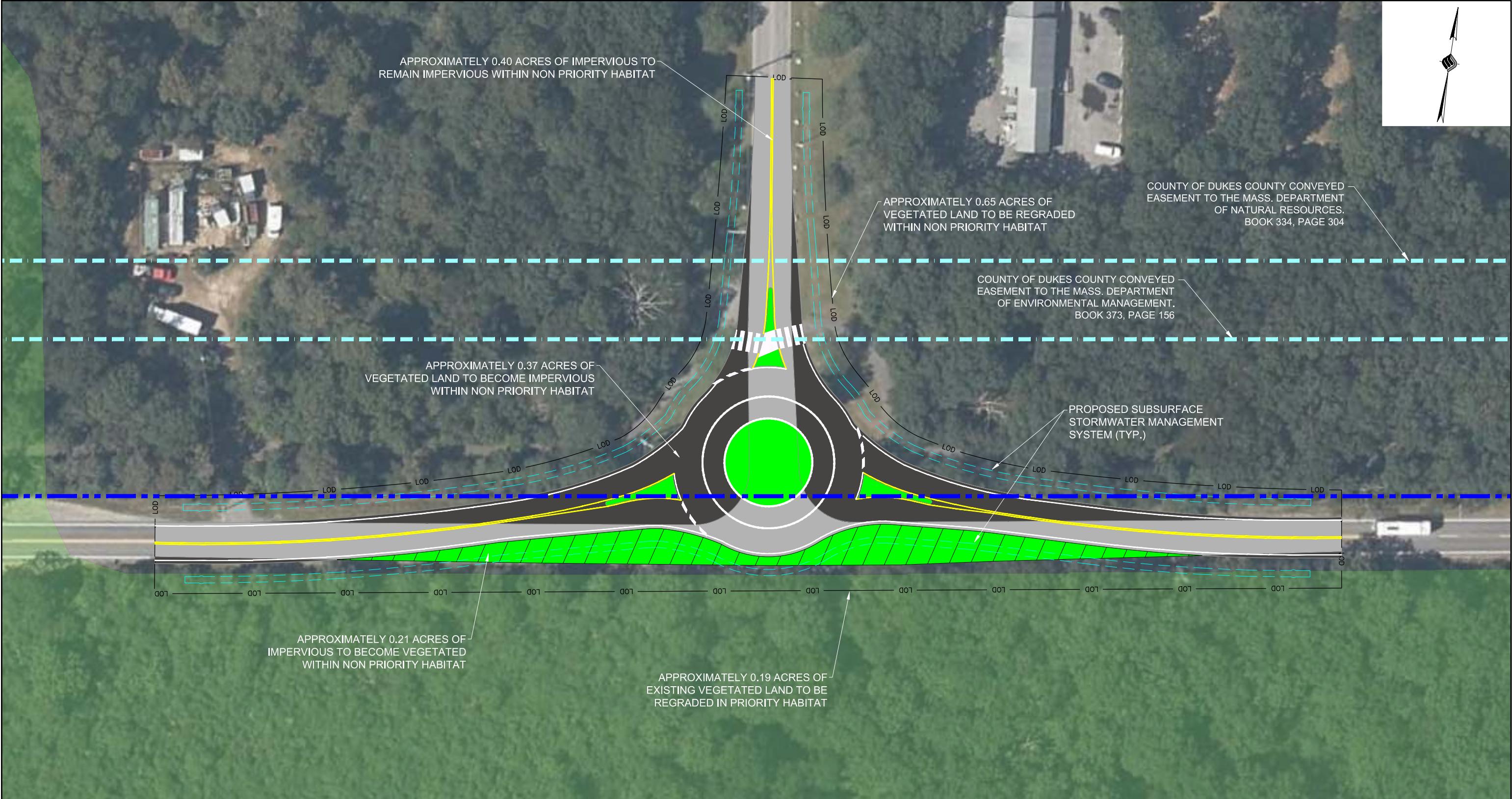
1. PROPERTY BOUNDARIES AND INFORMATION PROVIDED BY NITCH ENGINEERING BOUNDARY SURVEY DATED AUGUST 2013.



DRAFT EIR/EA

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					MARTHA'S VINEYARD AIRPORT WEST TISBURY, MASSACHUSETTS ENVIRONMENTAL IMPACT REPORT / ENVIRONMENTAL ASSESSMENT			
	REV	DATE	DESCRIPTION	BY	ACCESS ROAD ALT 8-1 - RIGHT TURN LANE			
	<div>McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301</div>							
SCALE: 1" = 60'					DESIGN: SRS		3-15	
DRAWN: RHL					PROJECT:18226.07			
CHECKED: MTO		DATE: NOVEMBER 2020						

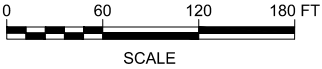


LEGEND

- LOD APPROXIMATE LIMIT OF DISTURBANCE
- APPROXIMATE AIRPORT PROPERTY LINE
- PRIORITY HABITAT
- PROPOSED PAVEMENT – NEW CONSTRUCTION
- PROPOSED PAVEMENT – RECONSTRUCTION
- EXISTING PAVEMENT TO BECOME VEGETATED LAND
- APPROXIMATE DEPARTMENT OF CONSERVATION RECREATION EASEMENT LINE
- PROPOSED LANDSCAPING
- PROPOSED STORMWATER MANAGEMENT

NOTES:

1. PROPERTY BOUNDARIES AND INFORMATION PROVIDED BY NITCH ENGINEERING BOUNDARY SURVEY DATED AUGUST 2013.



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MARTHA'S VINEYARD AIRPORT
WEST TISBURY, MASSACHUSETTS
ENVIRONMENTAL IMPACT REPORT /
ENVIRONMENTAL ASSESSMENT

ACCESS ROAD ALT 8-2 -
ROUNDBOUT

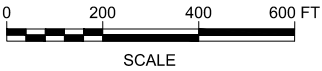
 **McFarland Johnson**
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

SCALE: 1" = 60'	DESIGN: SRS	3-16
DRAWN: RHL	PROJECT:18226.07	
CHECKED: MTO	DATE: NOVEMBER 2020	




- LEGEND**
- LOD — APPROXIMATE LIMIT OF DISTURBANCE
 - — — — — APPROXIMATE AIRPORT PROPERTY LINE
 - — — — — PRIORITY HABITAT
 - — — — — PROPOSED PAVEMENT — NEW CONSTRUCTION
 - — — — — APPROXIMATE DEPARTMENT OF CONSERVATION RECREATION EASEMENT LINE
 - — — — — PROPOSED STORMWATER MANAGEMENT

- NOTES:**
1. PROPERTY BOUNDARIES AND INFORMATION PROVIDED BY NITCH ENGINEERING BOUNDARY SURVEY DATED AUGUST 2013.



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					MARTHA'S VINEYARD AIRPORT WEST TISBURY, MASSACHUSETTS ENVIRONMENTAL IMPACT REPORT / ENVIRONMENTAL ASSESSMENT		
	REV	DATE	DESCRIPTION	BY	ACCESS ROAD ALT 8-3 - CONNECTOR ROAD		
	<div><div>McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301</div></div>						
				SCALE: 1" = 200'	DESIGN: SRS	3-17	
				DRAWN: RHL	PROJECT:18226.07		
				CHECKED: MTO	DATE: NOVEMBER 2020		

 **McFarland Johnson**
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

TERMINAL BUILDING IMPROVEMENTS ALTERNATIVES

ALTERNATIVE 1
(PREFERRED ALTERNATIVE)



ALTERNATIVE 2



ALTERNATIVE 3



- key
- existing with maintenance upgrades
 - new and more functional space

FIGURE 3-19

TERMINAL BUILDING IMPROVEMENTS ALTERNATIVES

ALTERNATIVE 1A (PREFERRED)



FIGURE 3-20

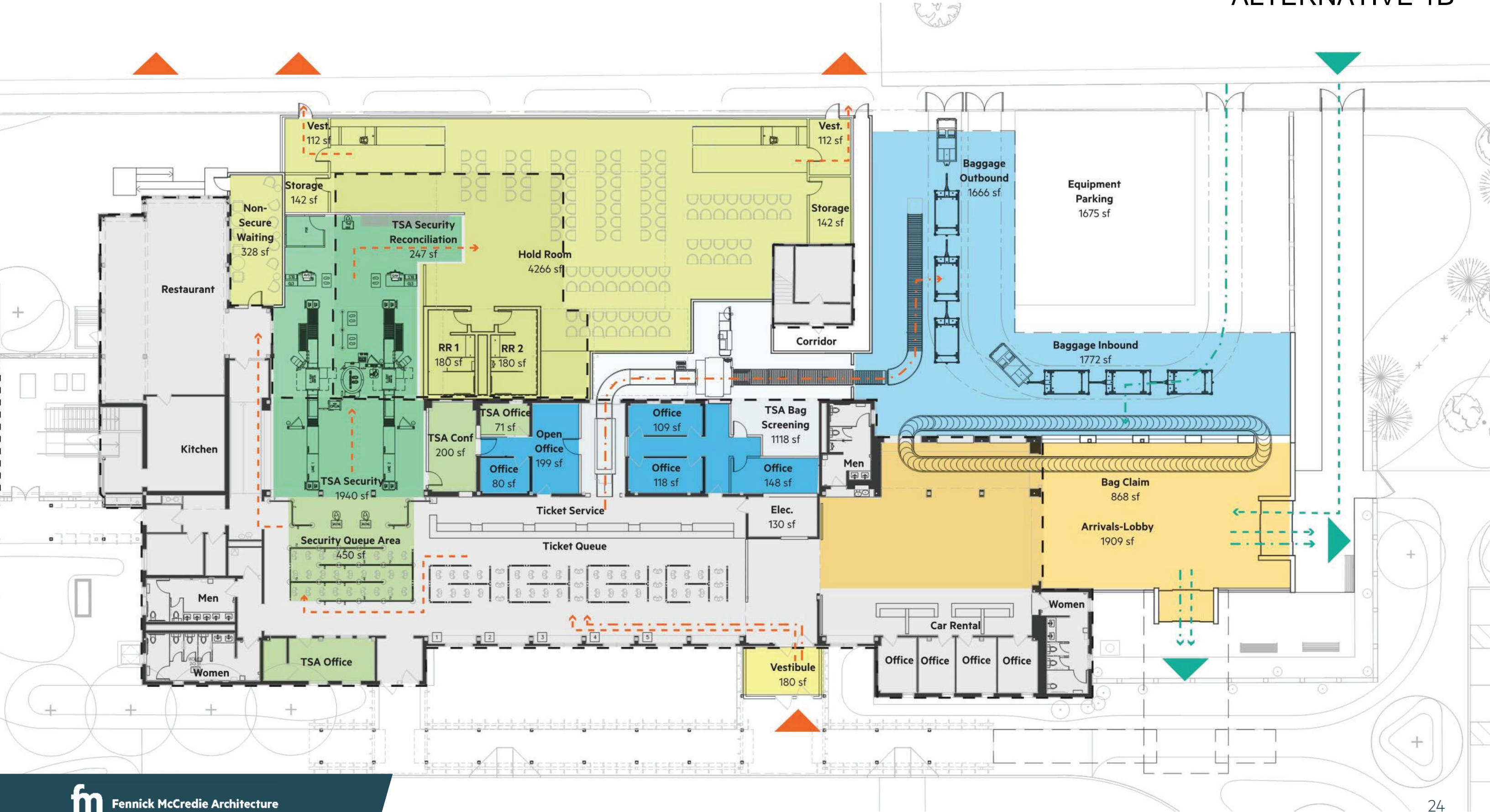
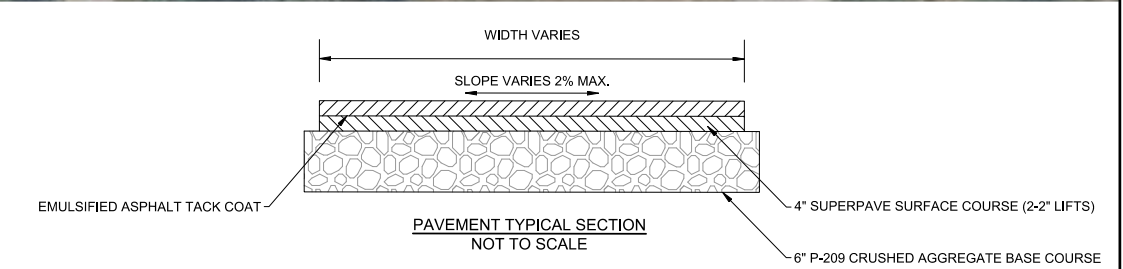


FIGURE 3-21

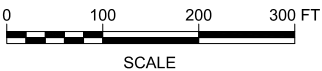


LEGEND

- APPROXIMATE AIRPORT PROPERTY LINE
- PRIORITY HABITAT
- EXISTING PAVEMENT TO BECOME VEGETATED LAND
- PROPOSED PAVEMENT – NEW CONSTRUCTION
- ROFA — RUNWAY OBJECT FREE AREA
- TOFA — TAXIWAY OBJECT FREE AREA
- LOD — APPROXIMATE LIMIT OF DISTURBANCE
- PROPOSED CENTERLINE

- CONTRACTOR LAYDOWN AND STAGING AREA
- PROPOSED STORMWATER MANAGEMENT
- SILT FENCE
- PROPOSED HAUL ROUTE

NOTES:
1. AERIAL PHOTO TAKEN IN AUGUST, 2019 BY GEOPRO.



DRAFT EIR/EA

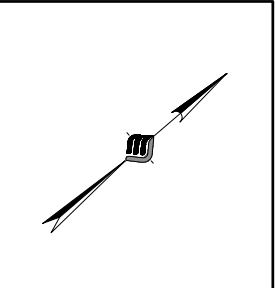
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MARTHA'S VINEYARD AIRPORT
WEST TISBURY, MASSACHUSETTS
ENVIRONMENTAL IMPACT REPORT /
ENVIRONMENTAL ASSESSMENT

IMPROVE AIRCRAFT PARKING &
MOVEMENT AREAS ALT 9-1A -
PAVE TRANSIENT TURF TIE-DOWN AREA

SCALE: 1" = 100'	DESIGN: SRS	3-22
DRAWN: SRS	PROJECT: 18226.07	
CHECKED: MTO	DATE: NOVEMBER 2020	

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

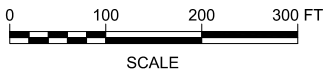


LEGEND

- APPROXIMATE AIRPORT PROPERTY LINE
- PRIORITY HABITAT
- EXISTING PAVEMENT TO BECOME VEGETATED LAND
- PROPOSED PAVEMENT – NEW CONSTRUCTION
- ROFA --- RUNWAY OBJECT FREE AREA
- TOFA --- TAXIWAY OBJECT FREE AREA
- LOD --- APPROXIMATE LIMIT OF DISTURBANCE
- PROPOSED CENTERLINE

- CONTRACTOR LAYDOWN AND STAGING AREA
- PROPOSED STORMWATER MANAGEMENT
- SF --- SF --- SF --- SILT FENCE
- PROPOSED HAUL ROUTE

NOTES:
1. AERIAL PHOTO TAKEN IN AUGUST, 2019 BY GEOPRO.



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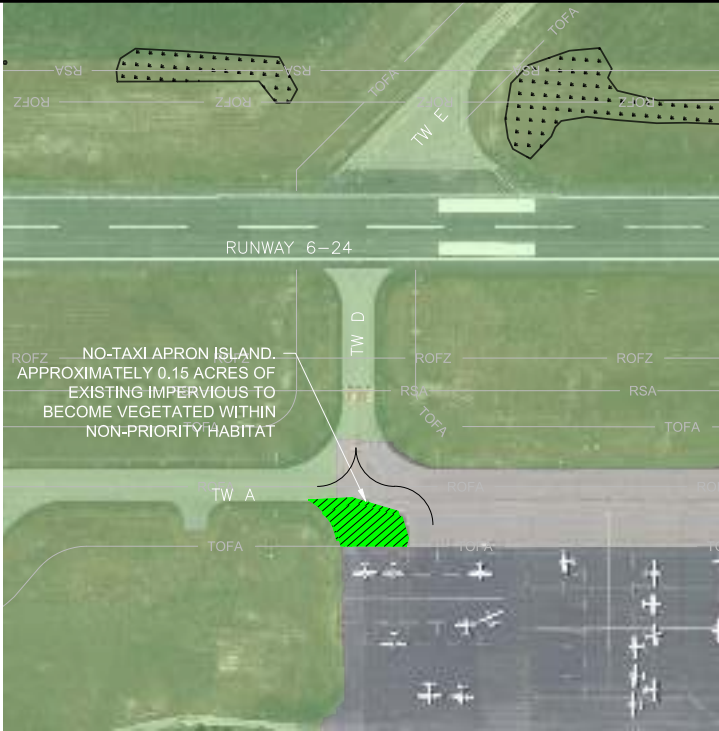
MARTHA'S VINEYARD AIRPORT
WEST TISBURY, MASSACHUSETTS
ENVIRONMENTAL IMPACT REPORT /
ENVIRONMENTAL ASSESSMENT

IMPROVE AIRCRAFT PARKING & MOVEMENT AREAS ALT 9-1B - PAVETRANSIENT TURF TIE-DOWN AREA

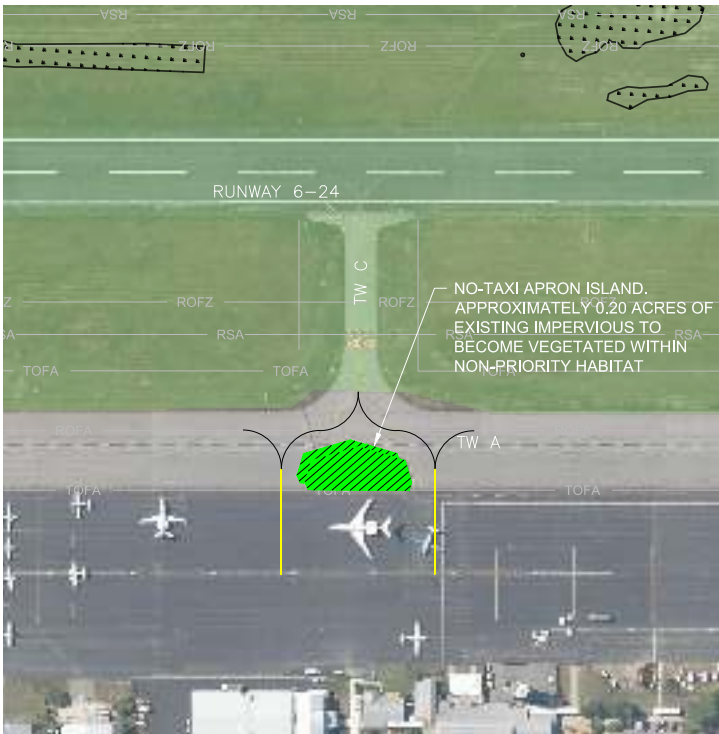
SCALE: 1" = 100'	DESIGN: SRS	3-23
DRAWN: SRS	PROJECT: 18226.07	
CHECKED: MTO	DATE: NOVEMBER 2020	



McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301



NO-TAXI APRON ISLAND AT TW D
SCALE: 1" = 300'



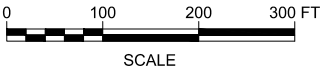
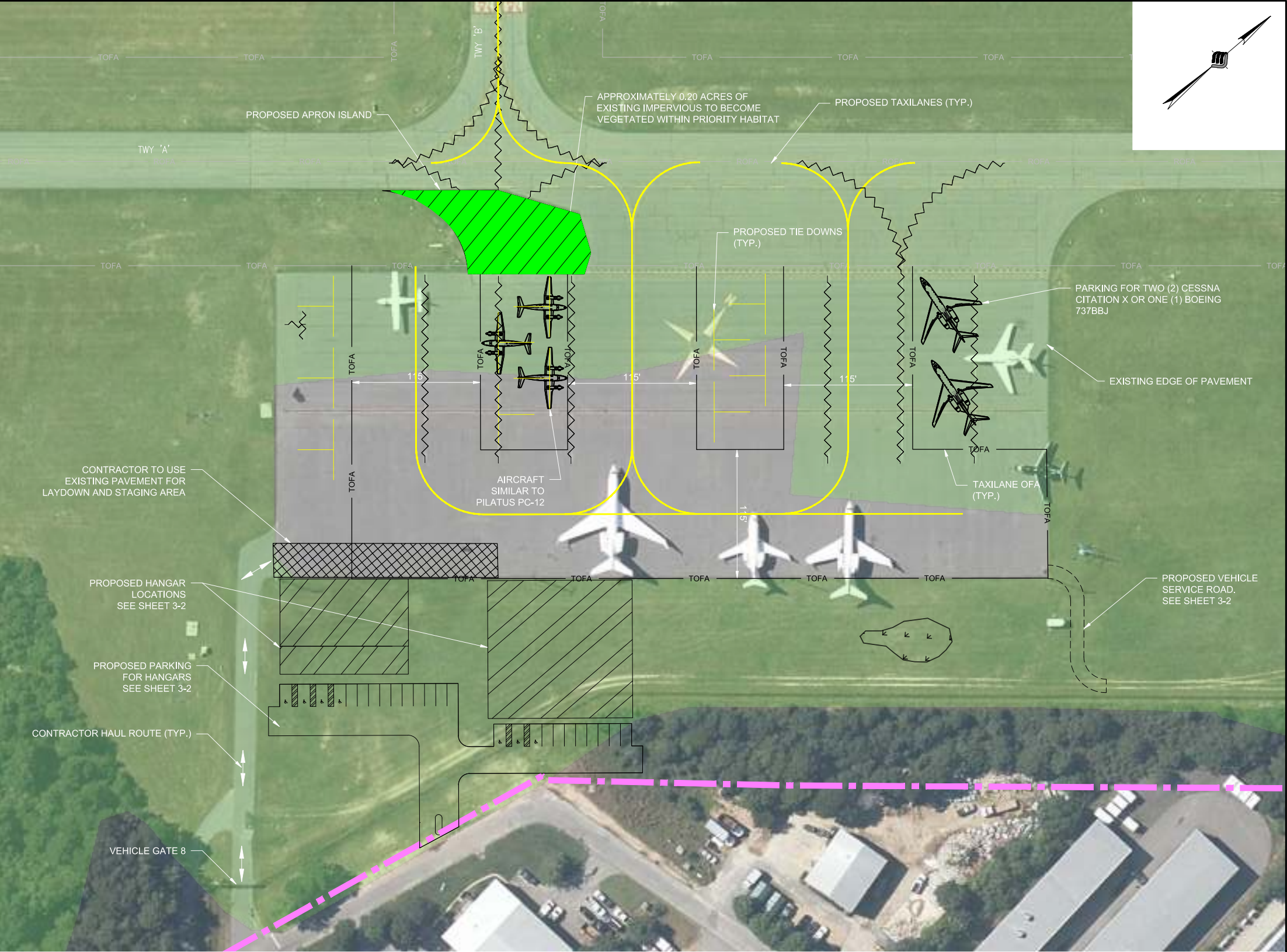
NO-TAXI APRON ISLAND AT TW C
SCALE: 1" = 300'

LEGEND

- APPROXIMATE AIRPORT PROPERTY LINE
- PRIORITY HABITAT
- EXISTING PAVEMENT TO BECOME VEGETATED LAND
- PROPOSED PAVEMENT – NEW CONSTRUCTION
- PROPOSED PAVEMENT – RECONSTRUCTION
- ROFA – RUNWAY OBJECT FREE AREA
- TOFA – PROPOSED TAXIWAY OBJECT FREE AREA
- LOD – APPROXIMATE LIMIT OF DISTURBANCE

- PROPOSED CENTERLINE
- PAVEMENT MARKING REMOVAL
- PROPOSED BUILDING
- CONTRACTOR LAYDOWN AND STAGING AREA
- LAND RELEASE BOUNDARY

- NOTES:
- AIRCRAFT PARKING AND MOVEMENT AREA LAYOUT DIGITIZED FROM AERIAL PHOTO. LOCATION ADJUSTED TO MATCH BASE PLAN PROVIDED BY OTHERS.
 - AERIAL PHOTO TAKEN IN AUGUST, 2019 BY GEOPRO.



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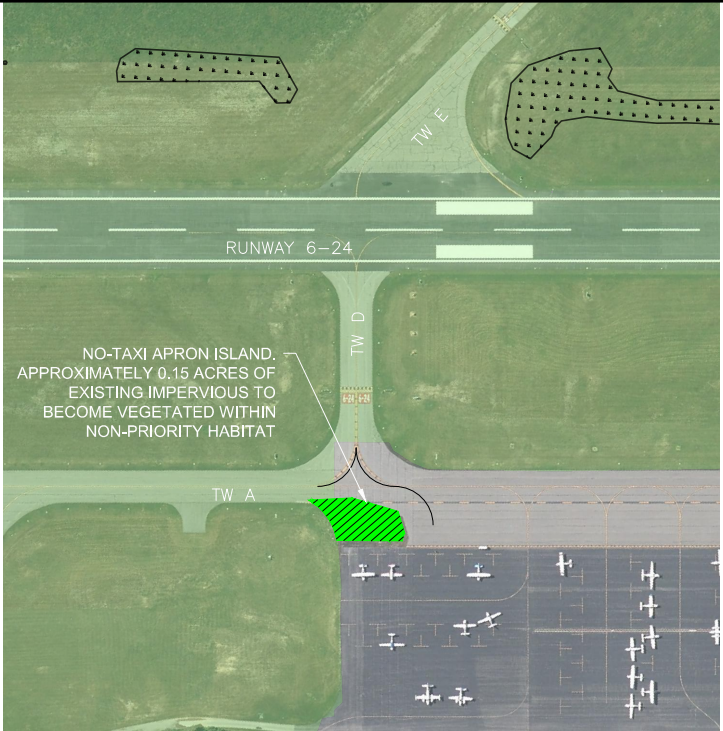
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MARTHA'S VINEYARD AIRPORT
WEST TISBURY, MASSACHUSETTS
ENVIRONMENTAL IMPACT REPORT /
ENVIRONMENTAL ASSESSMENT

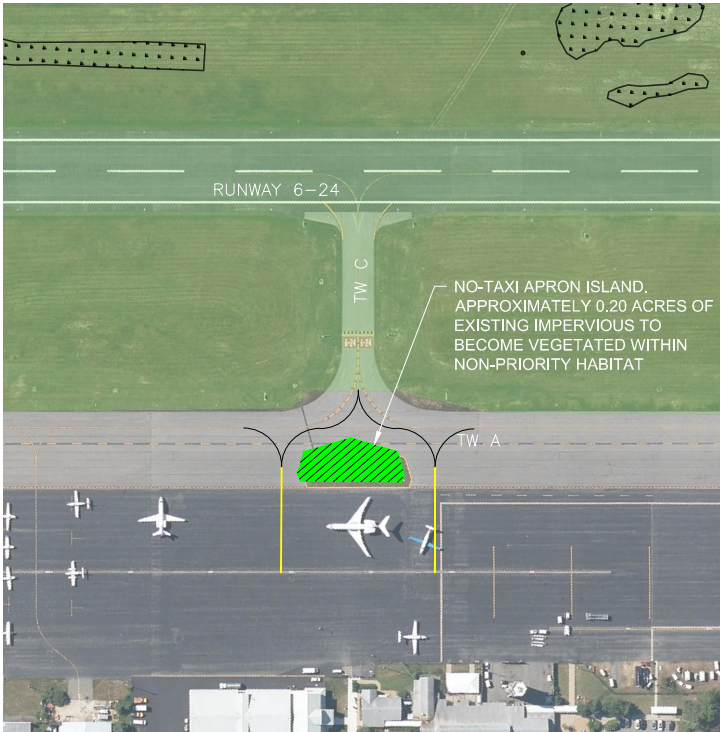
IMPROVE AIRCRAFT PARKING & MOVEMENT AREAS ALT 9-2A
-RECONFIGURE SOUTHEAST RAMP

SCALE: AS SHOWN	DESIGN: SRS	3-24
DRAWN: SRS	PROJECT:18226.07	
CHECKED: MTO	DATE: NOVEMBER 2020	

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301



NO-TAXI APRON ISLAND AT TW D
SCALE: 1" = 300'



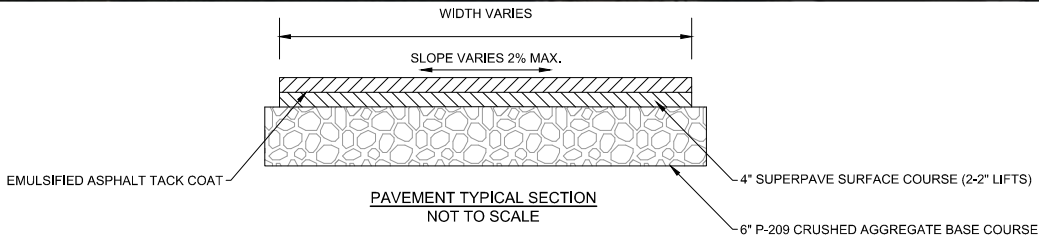
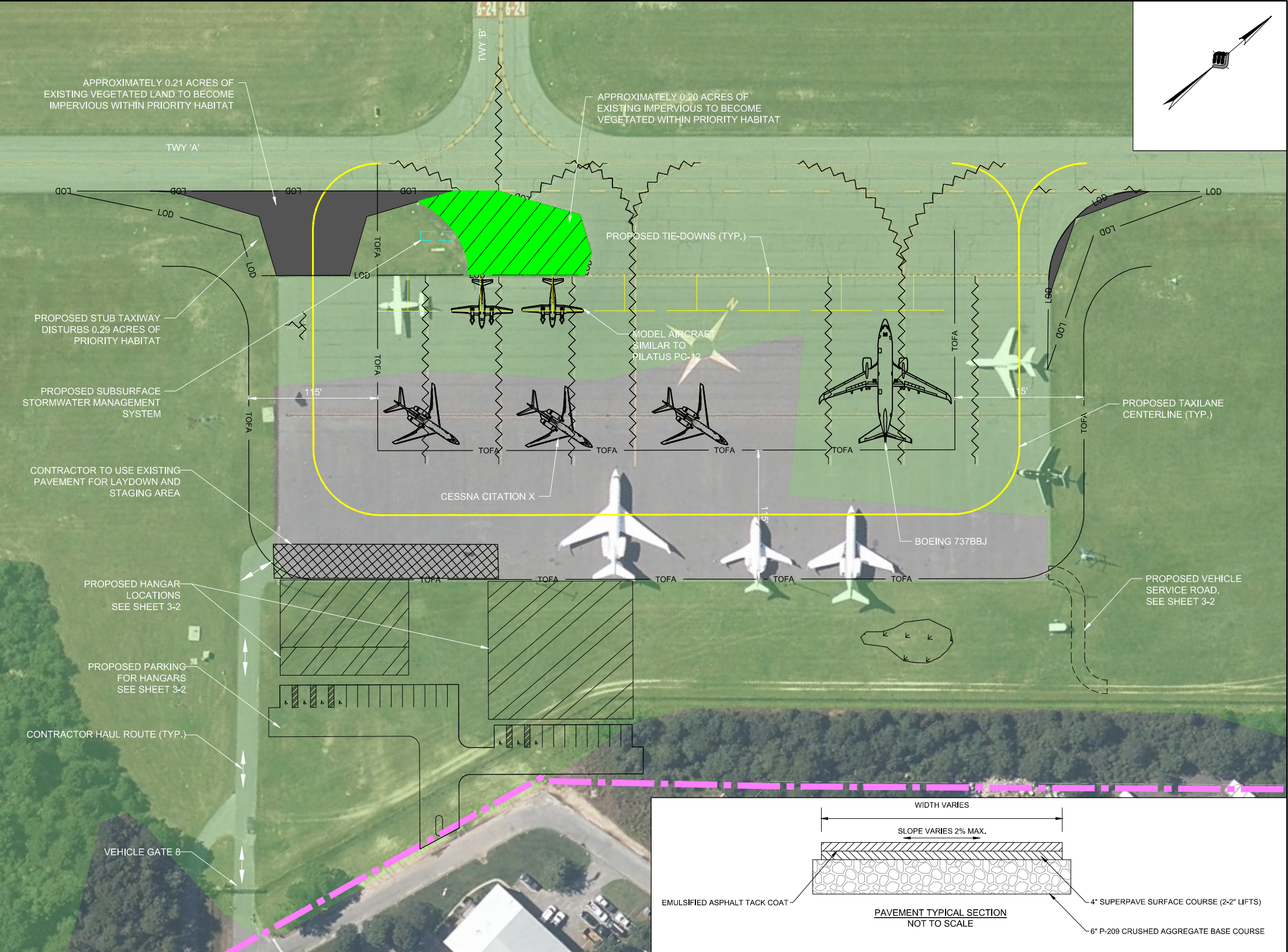
NO-TAXI APRON ISLAND AT TW C
SCALE: 1" = 300'

LEGEND

- APPROXIMATE AIRPORT PROPERTY LINE
- PRIORITY HABITAT
- EXISTING PAVEMENT TO BECOME VEGETATED LAND
- PROPOSED PAVEMENT - NEW CONSTRUCTION
- PROPOSED PAVEMENT - RECONSTRUCTION
- ROFA - RUNWAY OBJECT FREE AREA
- TOFA - PROPOSED TAXIWAY OBJECT FREE AREA
- LOD - APPROXIMATE LIMIT OF DISTURBANCE

- PROPOSED CENTERLINE
- PAVEMENT MARKING REMOVAL
- PROPOSED BUILDING
- CONTRACTOR LAYDOWN AND STAGING AREA
- LAND RELEASE BOUNDARY

- NOTES:
- AIRCRAFT PARKING AND MOVEMENT AREA LAYOUT DIGITIZED FROM AERIAL PHOTO. LOCATION ADJUSTED TO MATCH BASE PLAN PROVIDED BY OTHERS.
 - AERIAL PHOTO TAKEN IN AUGUST, 2019 BY GEOPRO.



DRAFT EIR/EA

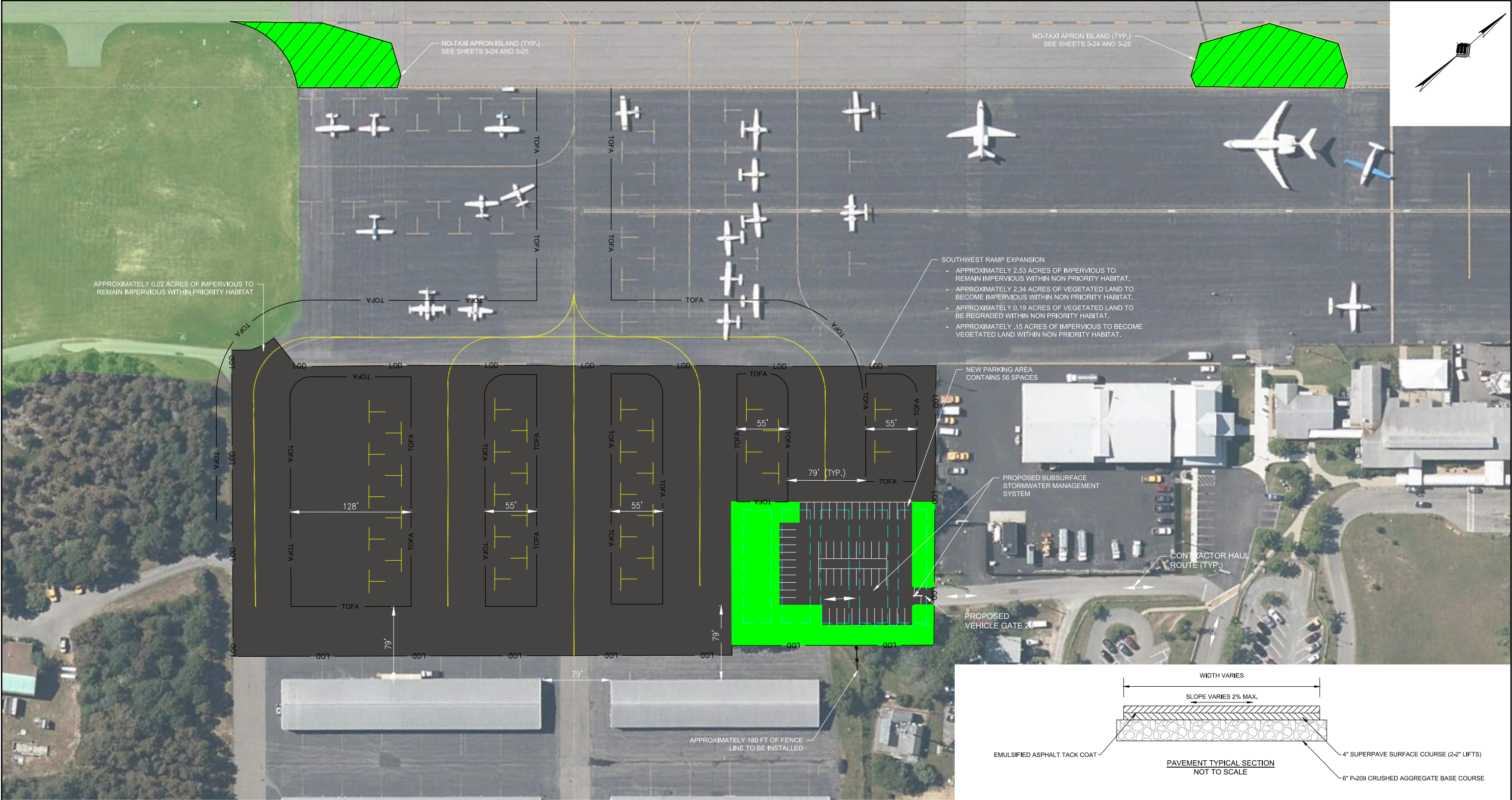
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**MARTHA'S VINEYARD AIRPORT
WEST TISBURY, MASSACHUSETTS
ENVIRONMENTAL IMPACT REPORT /
ENVIRONMENTAL ASSESSMENT**

**IMPROVE AIRCRAFT PARKING &
MOVEMENT AREAS ALT 9-2B - NEW STUB
TAXIWAY ON SOUTHEAST RAMP (PREFERRED)**

SCALE: 1" = 100'	DESIGN: SRS	3-25
DRAWN: SRS	PROJECT: 18226.07	
CHECKED: MTO	DATE: NOVEMBER 2020	

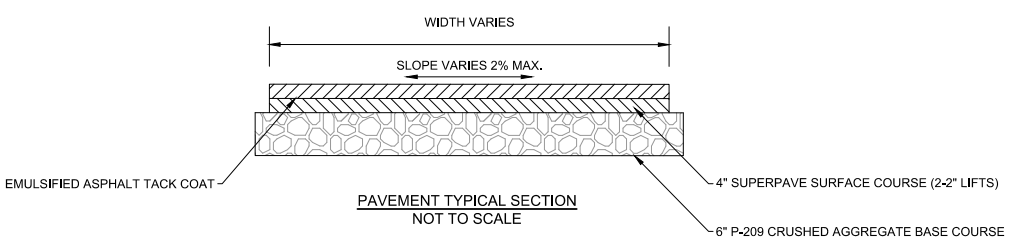
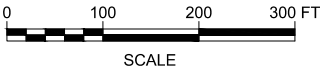
McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301



LEGEND

- APPROXIMATE AIRPORT PROPERTY LINE
- PRIORITY HABITAT
- LOD --- APPROXIMATE LIMIT OF DISTURBANCE
- TOFA --- TAXIWAY OBJECT FREE AREA
- PROPOSED TAXIWAY CENTERLINE
- PROPOSED PAVEMENT
- EXISTING PAVEMENT TO BECOME VEGETATED LAND
- PROPOSED LANDSCAPE
- PROPOSED FENCE

NOTES:
1. AERIAL PHOTO TAKEN IN AUGUST, 2019.



DRAFT EIR/EA

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECT DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

MARTHA'S VINEYARD AIRPORT
WEST TISBURY, MASSACHUSETTS
ENVIRONMENTAL IMPACT REPORT /
ENVIRONMENTAL ASSESSMENT

IMPROVE AIRCRAFT PARKING &
MOVEMENT AREAS ALT 9-3 - RECONFIG.
SOUTHWEST RAMP - LAYOUT (PREFERRED)

SCALE: 1" = 100'	DESIGN: SRS	3-27
DRAWN: SRS	PROJECT:18226.07	
CHECKED: MTO	DATE: NOVEMBER 2020	

 **McFarland Johnson**
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

Table 3-1 Approximate Areas of Disturbance within Priority and Estimated Habitat (Acres, Preferred Alternatives Shaded)

PROJECT	EXISTING VEGETATED LAND TO BE REGRADED	EXISTING VEGETATED LAND TO BECOME IMPERVIOUS	EXISTING IMPERVIOUS RETURNED TO GRASS	NET NEW IMPERVIOUS	VEGETA- TION MGMT
1. Business Park Lots 34 and 38		1.2		1.2	
2. Aircraft Hangar Development	0.7	1.0		1.0	
3. Improve Fuel Farm Access and Safety	0.1				
4A. Airspace Vegetation Management - Runway 6	0.3				2.8
4B. Airspace Vegetation Management - Runway 24					19.7
5-1A. Runway 15-33 and Taxiway E Reconstruction - Maintain Existing Thresholds, Construct Partial Parallel Taxiway E and Remove Vegetation Obstructions	9.6	1.5	6.9	-5.5	17.7
5-1B. Runway 15-33 and Taxiway E Reconstruction - Maintain Existing Thresholds, Construct North Parallel Taxiway E and Remove Vegetation Obstructions	12.5	2.8	8.2	-5.4	17.7
5-1C. Runway 15-33 and Taxiway E Reconstruction - Maintain Existing Thresholds, Construct South Parallel Taxiway E and Remove Vegetation Obstructions	12.0	2.7	8.3	-5.6	17.9
5-1D. Runway 15-33 and Taxiway E Reconstruction - Maintain Existing Thresholds, Construct Full Parallel Taxiway E and Remove Vegetation Obstructions	10.9	2.5	8.3	-5.7	17.7
5-2. Runway 15-33 and Taxiway E Reconstruction - Maintain Existing Thresholds, Raise Runway 15 End, Construct South Parallel Taxiway E and Remove Vegetation Obstructions	17.1	2.5	8.3	-5.8	10.0

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PROJECT	EXISTING VEGETATED LAND TO BE REGRADED	EXISTING VEGETATED LAND TO BECOME IMPERVIOUS	EXISTING IMPERVIOUS RETURNED TO GRASS	NET NEW IMPERVIOUS	VEGETA- TION MGMT
5-3. Runway 15-33 and Taxiway E Reconstruction - Displace Runway 15-33 Threshold 275' and Extend Runway 33 275', Construct South Parallel Taxiway E and Remove Vegetation Obstructions	14.9	3.3	8.3	-5.0	10.0
5-4. Runway 15-33 and Taxiway E Reconstruction - Shift Runway 15-33 275', Construct South Parallel Taxiway E and Remove Vegetation Obstructions	13.5	3.1	8.7	-5.6	13.2
5-5. Runway 15-33 and Taxiway E Reconstruction - Displace Runway 15 Threshold 275', Construct Partial Parallel Taxiway E and Remove Vegetation Obstructions	10.1	1.0	7.0	-6.0	9.5
6. Regrade Runway 6-24 Side Safety Areas	26.4				
7. Terminal Building Renovation					
8-1. Access Road Improvements - Right-Turn Lane					
8-2. Access Road Improvements - Roundabout	0.2				
8-3. Access Road Improvements - Connector Road	1.0	0.4		0.4	
8-4. Access Road Improvements - Left-Turn Lane	0.02	0.01		0.0	
9. Improve Aircraft Parking and Movement Areas					
9-1A. Pave Transient Turf Tie-Down Area	0.2	5.1	0.2	4.9	
9-1B. Pave Transient Turf Tie-Down Area, Reduced Pvmt.	0.5	4.1	0.2	4.0	
9-2A. Reconfigure Existing Southeast Ramp			0.2	-0.2	
9-2B. New Stub Taxiway to Southeast Ramp	0.3	0.2	0.2	0.0	
9-3. Reconfigure Southwest Ramp					
TOTAL WITH PREFERRED ALTERNATIVES ONLY	11.4	3.4	7.2	-3.8	32.0

Table 3-2 Approximate Areas of Disturbance within Non-Priority Habitat (Acres, Preferred Alternatives Shaded)

PROJECT	EXISTING VEGETATED LAND TO BE REGRADED	EXISTING VEGETATED LAND TO BECOME IMPERVIOUS	EXISTING IMPERVIOUS RETURNED TO GRASS	NET NEW IMPERVIOUS	VEGETA- TION MGMT
1. Business Park Lots 34 and 38					
2. Aircraft Hangar Development	0.1	0.04		0.04	
3. Improve Fuel Farm Access and Safety	0.1				
4A. Airspace Vegetation Management - Runway 6					0.9
4B. Airspace Vegetation Management - Runway 24					
5-1A. Runway 15-33 and Taxiway E Reconstruction - Maintain Existing Thresholds, Construct Partial Parallel Taxiway E and Remove Vegetation Obstructions					
5-1B. Runway 15-33 and Taxiway E Reconstruction - Maintain Existing Thresholds, Construct North Parallel Taxiway E and Remove Vegetation Obstructions					
5-1C. Runway 15-33 and Taxiway E Reconstruction - Maintain Existing Thresholds, Construct South Parallel Taxiway E and Remove Vegetation Obstructions					
5-1D. Runway 15-33 and Taxiway E Reconstruction - Maintain Existing Thresholds, Construct Full Parallel Taxiway E and Remove Vegetation Obstructions					
5-2. Runway 15-33 and Taxiway E Reconstruction - Maintain Existing Thresholds, Raise Runway 15 End, Construct South Parallel Taxiway E and Remove Vegetation Obstructions					

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PROJECT	EXISTING VEGETATED LAND TO BE REGRADED	EXISTING VEGETATED LAND TO BECOME IMPERVIOUS	EXISTING IMPERVIOUS RETURNED TO GRASS	NET NEW IMPERVIOUS	VEGETA- TION MGMT
5-3. Runway 15-33 and Taxiway E Reconstruction - Displace Runway 15-33 Threshold 275' and Extend Runway 33 275 ft., Construct South Parallel Taxiway E and Remove Vegetation Obstructions			0.3	-0.3	
5-4. Runway 15-33 and Taxiway E Reconstruction - Shift Runway 15-33 275 ft., Construct South Parallel Taxiway E and Remove Vegetation Obstructions			0.3	-0.3	3.1
5-5. Runway 15-33 and Taxiway E Reconstruction - Displace Runway 15 Threshold 275 ft., Construct Partial Parallel Taxiway E and Remove Vegetation Obstructions					
6. Regrade Runway 6-24 Side Safety Areas					
7. Terminal Building Renovation					
8-1. Access Road Improvements - Right-Turn Lane	0.2	0.1		0.1	
8-2. Access Road Improvements - Roundabout	0.7	0.4	0.2	0.2	
8-3. Access Road Improvements - Connector Road	1.5	0.6		0.6	
8-4. Access Road Improvements - Left-Turn Lane	0.3	0.2		0.2	
9. Improve Aircraft Parking and Movement Areas					
9-1A. Pave Transient Turf Tie-Down Area	0.1		0.1	-0.1	
9-1B. Pave Transient Turf Tie-Down Area, Reduced Pvmt	0.1		0.1	-0.1	
9-2A. Reconfigure Existing Southeast Ramp			0.4	-0.4	
9-2B. New Stub Taxiway to Southeast Ramp			0.4	-0.4	
9-3. Reconfigure Southwest Ramp	0.2	2.3*	0.2	2.2	1.0 *
TOTAL WITH PREFERRED ALTERNATIVES ONLY	0.6	2.4	0.5	1.9	1.9

*1.0 acres of vegetated land to become impervious is forested and therefore also in the Vegetation Management column.

Table 3-3 Approximate Areas of Overall Disturbance (Acres, Preferred Alternatives Shaded)

PROJECT	EXISTING VEGETATED LAND TO BE REGRADED	EXISTING VEGETATED LAND TO BECOME IMPERVIOUS	EXISTING IMPERVIOUS RETURNED TO GRASS	NET NEW IMPERVIOUS	VEGETA- TION MGMT
1. Business Park Lots 34 and 38		1.2		1.2	
2. Aircraft Hangar Development	0.8	1.0		1.0	
3. Improve Fuel Farm Access and Safety	0.2				
4A. Airspace Vegetation Management - Runway 6	0.3				3.7
4B. Airspace Vegetation Management - Runway 24					19.7
5-1A. Runway 15-33 and Taxiway E Reconstruction - Maintain Existing Thresholds, Construct Partial Parallel Taxiway E and Remove Vegetation Obstructions	9.6	1.5	6.9	-5.5	17.7
5-1B. Runway 15-33 and Taxiway E Reconstruction - Maintain Existing Thresholds, Construct North Parallel Taxiway E and Remove Vegetation Obstructions	12.5	2.8	8.2	-5.4	17.7
5-1C. Runway 15-33 and Taxiway E Reconstruction - Maintain Existing Thresholds, Construct South Parallel Taxiway E and Remove Vegetation Obstructions	12.0	2.7	8.3	-5.6	17.9
5-1D. Runway 15-33 and Taxiway E Reconstruction - Maintain Existing Thresholds, Construct Full Parallel Taxiway E and Remove Vegetation Obstructions	10.9	2.5	8.3	-5.7	17.7
5-2. Runway 15-33 and Taxiway E Reconstruction - Maintain Existing Thresholds, Raise Runway 15 End, Construct South Parallel Taxiway E and Remove Vegetation Obstructions	17.1	2.5	8.3	-5.8	10.0

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PROJECT	EXISTING VEGETATED LAND TO BE REGRADED	EXISTING VEGETATED LAND TO BECOME IMPERVIOUS	EXISTING IMPERVIOUS RETURNED TO GRASS	NET NEW IMPERVIOUS	VEGETA- TION MGMT
5-3. Runway 15-33 and Taxiway E Reconstruction - Displace Runway 15-33 Threshold 275' and Extend Runway 33 275 ft., Construct South Parallel Taxiway E and Remove Vegetation Obstructions	14.9	3.3	8.5	-5.2	10.0
5-4. Runway 15-33 and Taxiway E Reconstruction - Shift Runway 15-33 275 ft., Construct South Parallel Taxiway E and Remove Vegetation Obstructions	13.5	3.1	9.0	-5.9	16.3
5-5. Runway 15-33 and Taxiway E Reconstruction - Displace Runway 15 Threshold 275 ft., Construct Partial Parallel Taxiway E and Remove Vegetation Obstructions	10.1	1.0	7.0	-6.0	9.5
6. Regrade Runway 6-24 Side Safety Areas	26.4				
7. Terminal Building Renovation					
8-1. Access Road Improvements - Right-Turn Lane	0.2	0.1		0.1	
8-2. Access Road Improvements - Roundabout	0.8	0.4	0.2	0.2	
8-3. Access Road Improvements - Connector Road	2.5	1.0		1.0	
8-4. Access Road Improvements - Left-Turn Lane	0.33	0.17		0.2	
9. Improve Aircraft Parking and Movement Areas					
9-1A. Pave Transient Turf Tie-Down Area	0.3	5.1	0.3	4.8	
9-1B. Pave Transient Turf Tie-Down Area, Reduced Pvmt	0.7	4.1	0.3	3.8	
9-2A. Reconfigure Existing Southeast Ramp			0.6	-0.6	
9-2B. New Stub Taxiway to Southeast Ramp	0.3	0.2	0.6	-0.3	
9-3. Reconfigure Southwest Ramp	0.2	2.3*	0.2	2.2	1.0*
TOTAL WITH PREFERRED ALTERNATIVES ONLY	12.0	5.8	7.7	-1.9	33.9

*1.0 acres of vegetated land to become impervious is forested and therefore also in the Vegetation Management column.

3.1 ALTERNATIVES ANALYSIS

3.1.1 Business Park Lots 34 and 38

A portion of Airport property is zoned as a B-III Light Industrial Service District. This land has been developed and leased for non-aviation commercial activities such as light industry, storage, service, and trades. This commercial space adds to the Island's economic vitality without detracting from the viability of other business areas. In addition, the Airport is required by the FAA to generate income from aviation and permitted non-aviation sources to provide revenue for the maintenance and upkeep of the facility. Lot 34 and Lot 38 are within this service district located between East Line Road and Barnes Road. Refer to **Figure 3-1**.

Lot 34 is 0.77 acre and approximately 225 feet by 150 feet, accessed off East Line Road. The vegetation was previously removed from this lot and the ground regraded. It remains unleased at this time. It is also within Priority Habitat.

Lot 38 is 0.43 acre and measures approximately 125 feet by 150 feet and is also accessed off East Line Road. This lot has previously been developed by SKY KAY, LLC. The leased lot is used as a tent and party rental business and is located in Priority Habitat.

No-Build

The No-Build Alternative would leave the lots in their current condition, with one lot developed and one partially developed. Since the habitat has already been disturbed, and since this alternative would not provide as much revenue as the build alternative, the No-Build Alternative is not preferred.

Build (Preferred Alternative)

The preferred alternative is for Lot 38 to remain in its current state of development and business use and to permit Lot 34 to be developed for commercial use in the future. Assuming the lots are fully built out, as most in the Business Park are, this would require 1.2 acres of existing vegetated land to become impervious, which would also decrease the Priority Habitat by 1.2 acres. Stormwater management on each lot is the responsibility of the individual lot leaseholders. There is no Airport construction cost associated with this alternative, as one lot is developed and one is prepared for development, and further costs would be the responsibility of the developer or tenant.

3.1.2 Aircraft Hangar Development

Current hangar demand exceeds adequate available hangar space at the Airport. In addition, as noted above, the Airport is required by the FAA to generate income to support the maintenance and upkeep of the facility. The Airport has current demand from a potential new tenant and future demand is anticipated. Refer to **Figure 3-2**.

No-Build

This alternative does not accommodate the current or future demand for hangar space at the Airport. Aircraft will continue to be stored outdoors in harsh weather elements and deicing chemicals will need to be applied in adverse weather conditions. The Airport will jeopardize a potential tenant from leasing space at the Airport which will eliminate future income for the Airport.

Build (Preferred Alternative)

The preferred alternative would allow for the construction of two hangars approximately 9,200 square feet and 15,234 square feet in size to accommodate the current and potential demand for hangar space. This alternative

would also include the construction of approximately 25 total vehicle parking spaces to accommodate the two hangars. This alternative would require the conversion of 1.0 acres of existing vegetated land that is Priority Habitat to impervious surface and require that 0.7 acre of vegetated land, also Priority Habitat, be disturbed to construct stormwater basins and associated grading. The Airport has limited locations where hangars of this size can be constructed, and the location selected along the edge of the Southeast Ramp requires the least amount of pavement construction since the aircraft will use the existing apron and taxiway system for parking and access. The overall project cost, including design, construction and contingencies, of this alternative is \$6.7 million.

3.1.3 Improve Fuel Farm Access and Safety

The Airport has an existing fuel farm located southwest of Runway 6 and the Turf Tie Down Area. The fuel farm contains three 20,000-gallon fuel tanks which include one 100LL AVGAS tank and two Jet A fuel tanks. The surface of the fuel farm is constructed of crushed asphalt with a concrete pad at the fill station only. The access road also consists of crushed asphalt and connects the fuel farm to the aircraft aprons. The crushed asphalt from both the fuel farm area and the access road is a source of foreign object debris (FOD) on the aprons and possibly the runways. FOD may cause damage to aircraft landing gear, propellers, and jet engines and is a recognized safety hazard. Refer to **Figure 3-3**.

No-Build

The No-Build alternative does not eliminate the crushed asphalt access road nor the crushed asphalt surface within the fuel farm area. By not improving this, the Airport will continue to have potential FOD problems associated with this material.

Build (Preferred Alternative)

This alternative includes paving the access road and the fuel farm area. Paving these two highly traveled areas will reduce maintenance costs associated with the efforts to keep FOD off the apron areas and runways. In addition, paving the entire fuel farm will limit the amount of vegetation growth which is both a maintenance effort and a fire hazard. This alternative will also include the replacement of the existing oil-water separator with a unit designed to meet the current MassDEP stormwater standards for land use with higher potential pollution loads (LUHPPL). The improvements to drainage also include the addition of a new deep sump and hooded catch basin.

This alternative does not require any additional impervious surface and is not an expansion of the existing footprint of the crushed asphalt. Outside of existing impervious surfaces, there would be 0.1 acre of Priority and 0.1 acre of non-Priority Habitat disturbance.

Paving the fuel farm and the access road meets the need by eliminating a safety hazard. Replacing the existing oil-water separator with a new unit upgrades the system to meet LUHPPL standards. This alternative is the preferred alternative and has a construction estimate of \$830,000.

3.1.4 Airspace Vegetation Management

The FAA has regulations and requirements for the protection of airspace and the safety of air navigation by keeping the approaches to runways clear of both natural and manmade obstructions. Having unobstructed airspace improves safety by allowing visual observations of the runway by the pilot, line-of-sight navigational aids, and unobstructed landing and departure slopes for the aircraft using the runway. If vegetation penetrates airspace, it can impact all of these and become a safety concern. Clear approaches are determined by surveying the height of obstructions and comparing them with the FAA defined requirements. If the approach surfaces are not clear, then due to the hazards, FAA can restrict the use and utility of the runway for aircraft.

Runway 6-24 Vegetation Management

Runway 6-24 is the primary runway with a length of 5,504 feet and a width of 100 feet. Runway 6-24 is best aligned with the summer prevailing winds which is the busiest period at the Airport. Runway 6-24 provides services for the larger jets at the Airport including the Embraer 190, Gulfstream G-550, Boeing 737 and Airbus A320. Runway 6-24 was reconstructed, excluding the turf Runway Safety Area (RSA), in 2019.

There are currently vegetation obstructions within the airspace located off both ends of the runway. The vegetation itself is located on Airport property, off Airport property within easements granted to protect aviation, and off Airport without easements. Obstructions to airspace are based upon the navigational properties of the runway, and opposite ends of the runway can have different navigational properties.

Runway 6 has less restrictive navigational properties (i.e., has steeper airspace surfaces) than Runway 24 and therefore can allow for taller vegetation. Because Runway 24 is the Airport's only all-weather runway suitable for inclement weather, it has lower, wider airspace surfaces and less latitude for vegetation growth.

The vegetation obstructions on the Runway 6 end penetrate the 20:1 and 30:1 airspace surfaces. These ratios define the rise over run of the airspace surfaces, in other words, a 20:1 surface rises 1 foot vertically for every 20 feet horizontally. The vegetation obstructions are along both sides of Edgartown-West Tisbury Road on property owned by the Airport and on Manuel F. Correllus State Forest (State Forest) property. The State Forest land includes an easement for the protection of aviation and allows for vegetation obstruction removal and maintenance.

Vegetation obstructions (mostly trees) are also located in the approach surfaces of the Runway 24 end of Runway 6-24. The approach surfaces with these vegetation penetrations include the 30:1 and 34:1 surfaces. The vegetation obstructions are along both sides of Barnes Road. The vegetation obstructions on the west side of Barnes Road are located on Airport property. The obstructions on the east side of Barnes Road are located within the State Forest, owned and managed by the Commonwealth of Massachusetts, Department of Conservation and Recreation (DCR). The majority of the obstructions located within the State Forest are within easements granted for the protection of aviation. However, there are additional areas that require vegetation removal that do not have an aviation protection easement. This vegetation obstruction removal will require extensive coordination with and approval from the DCR and the Massachusetts legislature through the Article 97 process, as discussed in Chapter 7, Regulatory Compliance. Refer to **Figure 3-5**.

No-Build

For Runway 6-24, it was found that the vegetation obstructions are impacting the safety (and potentially the utility, if FAA restricts its use because of the obstructions) of the runway. To address the potentially unsafe conditions, FAA could require the Airport to shorten the runway, limit the size and type of aircraft allowed on the runway, eliminate the use of the runway during inclement weather, or implement other modifications.

While the No-Build Alternative has no associated development, the flying public and emergency/disaster response would be adversely impacted should the FAA require implementation of these modifications. There could also be adverse economic impacts due to the potential loss of aviation traffic and the economic benefits that are generated by the Airport.

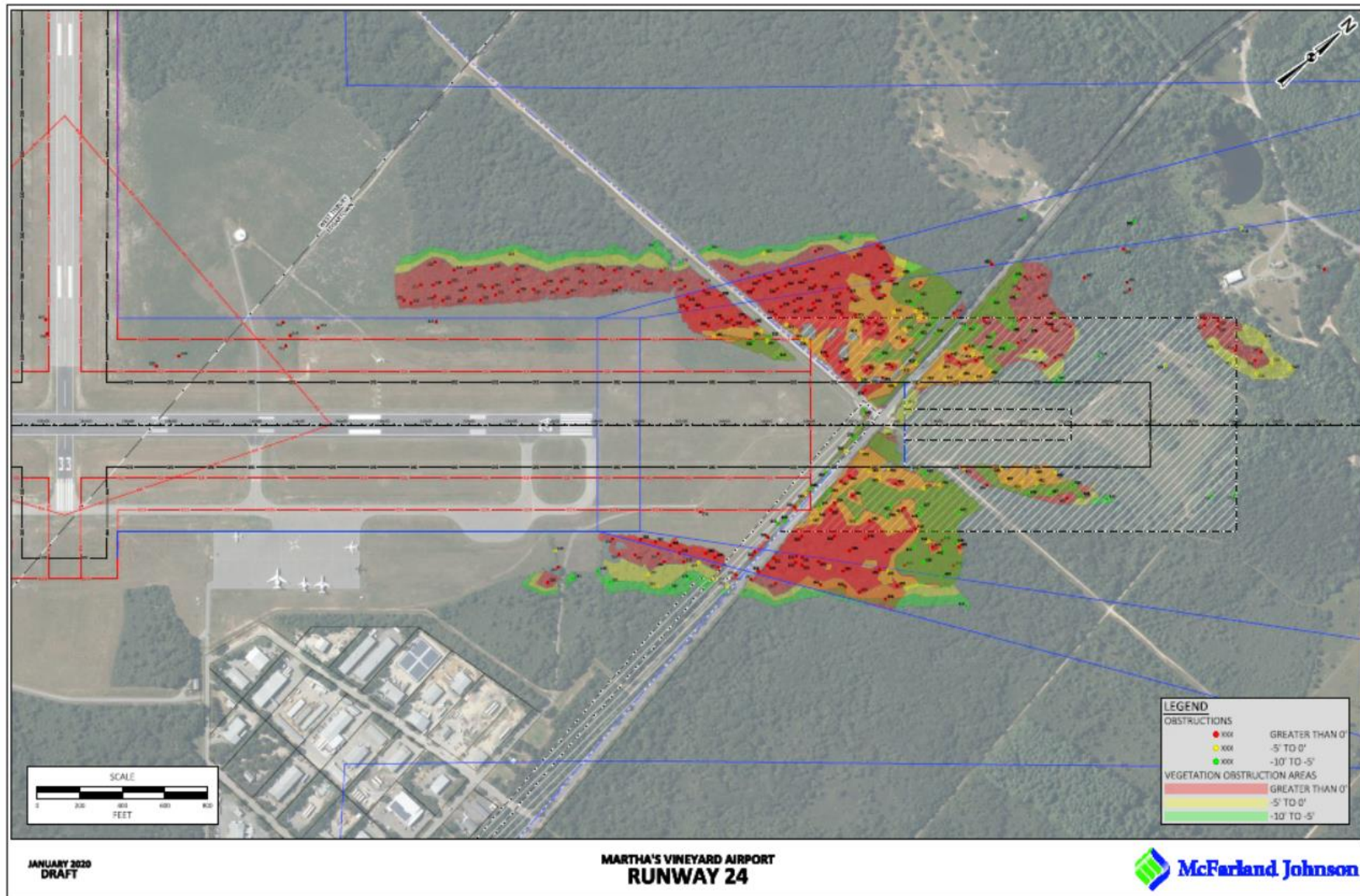
There is no immediate cost to the No-Build Alternative.

Build Alternative: Remove Vegetation from Part 77 Approach Surfaces

The design team initially considered the full range of airspace surfaces that were obstructed by vegetation and could require vegetation removal (primarily trees but also shrubs in some areas). The two airspace surfaces requiring the most vegetation removal are shown below and are called Federal Aviation Regulations (FAR) Part 77 surfaces and departure surfaces. FAR Part 77 provides for the regulation of objects affecting navigable airspace. However, it does not require removal of objects affecting airspace, but requires that users of the airspace be notified of the objects. Departure surfaces define surfaces that should be clear of obstructions so that aircraft can take off using instruments when visibility is poor. There is no published instrument departure procedure at the Airport, and FAA is not requiring the Airport to remove obstructions from departure surfaces at this time.

Removing trees from the full extent of FAR Part 77 approach surfaces and departure surfaces would result in over 46 acres of vegetation management, including a substantial amount within the State Forest outside of airport easements (**Figure 3-28**). Because FAA is not requiring that the FAR Part 77 approach and departure surfaces be cleared, and in consideration of the State Forest, sensitive habitats, numerous rare species, and the regulatory hurdles associated with vegetation management in the State Forest, the Airport prefers to reduce vegetation alteration to the minimum necessary to maintain current aircraft operational capabilities. For these reasons, this alternative was eliminated from consideration.

Figure 3-28 Vegetation Management Needed to Clear FAR Part 77 Approach and Departure Surfaces



Build (Preferred Alternative)

The build alternative would allow the Airport to remedy the potentially unsafe conditions by removing the vegetation obstructions. This would allow the Airport to maintain the current status of the runway, maintain the runway length, continue to service the aircraft types currently using the Airport, maintain the economic benefits generated by the Airport, enhance the safety of operations, and allow the Airport to continue to service flights during inclement weather by maintaining Martha's Vineyard's only all-weather runway.

The vegetation removal in the approach of Runway 6 would impact 3.7 acres of trees and the approach to Runway 24 end would impact 19.7 acres of mostly trees (**Figures 3-4 and 3-5**). Most of the vegetation management would be either on Airport property or within aviation easements on State Forest property. Approximately 3.2 acres of the tree removal would be within the State Forest where there are no existing easements. All but 0.9 acres of the vegetation management would be within Priority Habitat of Rare Species. Most of the forested habitat would be converted to successional habitat that would continue to support rare species and provide other ecosystem functions.

The vegetation management along portions of both Edgartown-West Tisbury Road and Barnes Road would affect the viewshed of the bike path and traveling vehicles for a distance of approximately 1,118 feet along the Runway 24 end and 1,292 feet along the Runway 6 end. The vegetation management along Barnes Road would also affect the viewshed of traveling vehicles where a more open landscape along the State Forest would be visible.

The total cost of the project is estimated at \$1.3 million.

3.1.5 Runway 15-33 Vegetation Management

Runway 15-33 is the secondary or crosswind runway at Martha's Vineyard Airport with a length of 3,328 feet and a width of 75 feet. Runway 15-33 has a Runway Design Code of a B-II. FAA runway design standards are based on the Runway Design Code of the most demanding aircraft or group of aircraft that conduct at least 500 annual operations (takeoff or landing) on the runway. In this case, Runway 15-33 is utilized by small turboprop aircraft that typically hold up to 11 passengers, such as the King Air 200, Rockwell Turbine Commander 1000, Piper Cheyenne III, as well as most piston-engine aircraft. The crosswind runway is important to smaller aircraft because it is critical that they be able to take off and land into the wind.

The vegetation obstructions to Runway 15 impact the 20:1 and the 30:1 surfaces. Runway 15-33 is located on Airport property; however, the Airport does not own or have easements beyond the end of Runway 15 where vegetation obstructions are located, and these vegetation obstructions occur within the property boundaries of the State Forest. Similar to Runway 24, removing these vegetation obstructions would require extensive coordination with and approval from the DCR and the Massachusetts legislature through the Article 97 process.

The vegetation obstructions to Runway 33 also impact the 20:1 and the 30:1 surfaces; however, the vegetation obstructions requiring removal are located on Airport property.

No-Build

The No-Build alternative would compromise Airport safety and reduce the utility of the existing runway, negatively impacting existing Airport operations. The impacts to Runway 15-33 are similar in that the FAA has regulations and requirements for the protection of airspace and the safety of navigation, and these include the protection of the end of runways from obstructions both natural and manmade. Runway 15-33 does not have line-of-sight navigational aids and requires visual observation of the runway by the pilot and unobstructed approach and departure surfaces.

For Runway 15-33, it was found that the vegetation obstructions are impacting the safety of the runway and as a result, the FAA could require runway modifications. These could include shortening the runway, limiting the size and type of aircraft allowed on the runway, or other modifications. Shortening the runway or limiting the size and type of aircraft would severely reduce its utility, as it only supports a limited range of aircraft sizes, and shortening it would further restrict the aircraft that could use it. Aircraft of all sizes have an allowable crosswind component or a crosswind speed that a plane can safely handle during arrival and departure. Runway 6-24 is the main runway at the Airport and is often utilized independent of wind conditions. However, when crosswind conditions are greater than 10 knots, small piston aircraft cannot safely arrive or depart and are required to utilize Runway 15-33 for arrivals and departures. If Runway 15-33 were substantially modified or restricted, these aircraft would frequently be unable to use the Airport, other than for emergency landings.

Build Alternatives 1A, 1B, 1C, and 1D – Removing Tree Obstructions in Both Runway Approaches

These alternatives (**Figures 3-6 through 3-9**) all would maintain the existing runway thresholds and remove the vegetation obstructions on both runway approaches, maintaining the current status of the runway. The alternatives differ in what is proposed for Taxiway E: Alternative 1A includes a partial parallel taxiway; Alternative 1B proposes a full parallel taxiway on the north side; and Alternatives 1C and 1D propose full parallel taxiways on the south side. These would allow the Airport to maintain the runway length in its current location, and to continue to service the type of aircraft currently using the Airport. This would require vegetation obstruction removal on both ends of the runway including vegetation management in the State Forest.

These options have been eliminated due to the tree removal required in the State Forest and the requirements of Article 97.

Build Alternatives 2, 3, 4, and 5 – Avoid Removing Tree Obstructions within State Forest

These alternatives (**Figures 3-10 through 3-13**) were developed in response to concerns over impacts within the State Forest and the regulatory requirements of Section 4(f) and Article 97. The objective is to avoid tree removal and vegetation management within the State Forest in the Runway 15 approach, as described below in Section 3.1.6.

Alternatives 2, 3, and 4 were eliminated from consideration for reasons described in Sections 3.1.6 and 3.1.7 below.

Alternative 5 would reduce the arrival length on Runway 33 by 275 feet from 3,328 feet to 3,053 feet, as described in Section 3.1.6 below. This alternative eliminates the requirement of vegetation obstruction removal in the State Forest on the Runway 15 end and minimizes the impacts of Runway 15-33 and Taxiway E improvements. It would require 9.5 acres of vegetation management on the sides of the Runway 15 end and in the approach to the Runway 33 end, all on Airport property. It has been selected as the preferred alternative. In the future, the operational length of Runway 15-33 will need to be studied in more detail to determine if the 3,328 feet of arrival length is required for future operations.

3.1.6 Runway 15-33 Reconstruction

Runway 15-33 is the secondary runway at Martha's Vineyard Airport with a length of 3,328 feet and a width of 75 feet. The runway was last reconstructed in 1992, and the FAA typically expects a service life of 20 years. The runway is showing signs of advanced deterioration with distresses such as weathering and cracking. In addition, the runway was previously 150 feet wide, and the excess pavement along each side was never removed and has deteriorated to where it is disintegrating and causing FOD to migrate onto the runway.

Prior to the reconstruction of runways, the FAA requires that runway approaches be clear of vegetation obstructions and that runway safety areas meet criteria. Runway safety areas are paved or turf areas located at the ends of runways and along the sides of runways that meet FAA criteria; specifically, they must be capable of supporting aircraft during emergency situations, free of obstruction, and cleared and graded to drain. The side safety areas along Runway 15-33 require grading to meet these criteria.

No-Build

The necessary reconstruction of Runway 15-33 and the side safety areas would not occur with the No-Build alternative, and the runway and its shoulders would continue to deteriorate. This would require the Airport to continue to perform regular maintenance and FOD removal. Additionally, airports that receive FAA financial support are obligated to maintain and upkeep the facilities to FAA standards or jeopardize future financial support.

Build Alternatives 1A, 1B, 1C, and 1D – Maintain Existing Thresholds

These build alternatives are shown in **Figures 3-6 through 3-9**. Alternatives 1A, 1B, 1C, and 1D include the reconstruction of the runway and side safety areas in the current location, while maintaining the current dimensions of 3,328 feet long by 75 feet wide. This would allow the Airport to maintain the current utility of the runway; however, these alternatives require additional vegetation management overall (approximately 18 acres) and tree removal in the State Forest on the Runway 15 end. The total cost of these alternatives (including Taxiway E reconstruction) range from \$11.2 to \$11.7 million.

These options have been eliminated due to the tree removal required in the State Forest and the requirements of Article 97.

Build Alternative 2 – Maintain Thresholds and Raise Runway Profile

Alternative 2 (**Figure 3-10**) includes the reconstruction of Runway 15-33 at a new profile grade that will raise the Runway 15 end approximately 14 higher than the existing condition. This would maintain the length and utility of the runway without having to remove vegetation obstructions within the State Forest. However, this would require approximately 130,000 cubic yards of fill, and require disturbing 17.1 acres of Priority Habitat and rare plants adjacent to the runway. The total cost of this alternative (including Taxiway E reconstruction) would be \$15.0 million. Due to the cost and extensive disturbance of habitat, this alternative has been eliminated.

Build Alternative 3 – Displace Runway 15 Threshold and Extend Runway 33 End

This alternative (**Figure 3-11**) would utilize an FAA procedure known as declared distance. Declared distance defines the operational length of a runway independent of the overall length and is utilized when adverse conditions eliminate the ability for the runway to be used for its full length. Runways have two ends, and each end has two functions, arrival and departure. This means that Runway 15-33 has four functions, arrivals and departures on each end. Runway 15-33 has an overall length of 3,328 feet and the operational length for each of the four functions is 3,328 feet. For each end of the runway the impact from trees is only for arriving aircraft; trees on the Runway 15 end only impact aircraft arriving on Runway 15 not aircraft departing on Runway 15. Based upon an analysis of the vegetation obstructions on the Runway 15 end, arriving aircraft would need to land 275 feet south of the existing end of the runway. Therefore, to avoid shortening the arrival length of the runway, 275 feet of additional pavement would be constructed on the Runway 33 end. The vegetation management on the Runway 33 end would be similar to Alternatives 1A, 1B, 1C, 1D, and 2, and the additional 275 feet of pavement would be constructed within the existing grass safety area. Utilizing the FAA procedure of declared distance, the additional 275' would not be available for any other operation, so that the operational length of the

runway for each of the four functions would remain at 3,328 feet. The total cost of this alternative (including Taxiway E reconstruction) would be \$12.1 million.

This alternative would result in approximately 2.3 acres in additional impervious surface than Alternative 5 and would impact approximately 4.8 acres more Priority Habitat; therefore, this alternative has been eliminated.

Build Alternative 4

This alternative (**Figure 3-12**) includes the shifting of Runway 33 275 feet to the south. The total cost of this alternative would be \$11.7 million. This alternative would result in approximately 2.1 acres more impervious surface than Alternative 5, would impact approximately 3.3 acres more Priority Habitat, and would require 4.3 acres more vegetation management. Therefore, this alternative has been eliminated.

Build Alternative 5 (Preferred Alternative)

This alternative (**Figure 3-13**) would reduce the arrival length (landing distance available) on Runway 33 by 275 feet, from 3,328 feet to 3,053 feet. The Airport has reviewed current usage of the runway, has solicited comments from Cape Air and the U.S. Coast Guard, both of which rely on Runway 33 for arrivals, and has determined that a reduction in arrival length of 275 feet would not adversely affect their operations. The total cost of this alternative (including Taxiway E reconstruction) would be \$10.4 million.

This alternative eliminates the requirement of vegetation obstruction removal in the State Forest on the Runway 15 end and has less overall vegetation management (8.9 acres) than the other alternatives. It also minimizes the impacts of Runway 15-33 and Taxiway E improvements, with 10.1 acres of temporary impact. It has been selected as the preferred alternative. In the future, the operational length of Runway 15-33 will need to be studied in more detail to determine if the 3,328 feet of arrival length is required for future operations.

3.1.7 Taxiway E Reconstruction

Taxiway E is a holdover from the former U.S. Navy configuration. Converted from a former runway, Taxiway E provides skewed, or non-perpendicular, access to both Runways 6-24 and 15-33. This configuration restricts visibility of the runway approach area for aircraft crossing or entering a runway.

The current configuration of Taxiway E also does not provide access to the threshold of Runway 15. To use the full runway length for departures or landings, an aircraft is required to back-taxi on the runway, which increases the risk of conflicts between aircraft using the runway.

No-Build

The No-Build alternative leaves Taxiway E in its current location and does not provide a taxiway connection to the Runway 15 threshold, so pilots will still need to back-taxi on the runway, which is a safety concern.

Build Alternatives 1A and 5 – Partial Parallel Taxiway (Preferred)

These alternatives retain the majority of the existing Taxiway E while reconstructing each end of the taxiway. A new portion of taxiway would be constructed parallel to Runway 15 which will provide a connection to the Runway 15 end and therefore eliminate the need to back taxi. At the Runway 6 end the intersection would be reconstructed to be perpendicular which will enhance visibility for pilots crossing the runway.

Alternative 1A includes the construction of a holding bay at Runway 15. Holding bays are paved areas where piston aircraft can park while completing pre-flight equipment checks and also provide areas for planes to turnaround should a return to the terminal be required. Upon discussion with the Airport, it has been determined that a holding bay is not necessary; therefore, this alternative has been eliminated.

Alternative 5 resolves the skewed connections with runways, extends Taxiway E to the Runway 15 threshold, and minimizes the amount of vegetation management, Priority Habitat impact and construction cost. Therefore, Alternative 5 is the preferred alternative.

Build Alternative 1B, 1C, 1D, 2, 3 and 4 – Construct Full Parallel Taxiway

These alternatives include the replacement of the existing alignment with a conventional parallel taxiway alignment located either north or south of Runway 15-33. These alternatives differ in the following ways:

Alternative 1B proposes a parallel taxiway along the south side of Runway 15-33 and a partial parallel taxiway to Runway 6-24, aligned with Taxiway C to access the terminal area. While aligning with Taxiway C provides the most direct access to the terminal area, Taxiway C crosses Runway 6-24 in the “high energy” portion of the runway. The FAA defines the “high energy” portion of the runway as the middle third of the runway and is the portion of the runway where a pilot can least maneuver to avoid collisions.

Alternative 1C replaces the existing alignment with a conventional parallel taxiway alignment, similar to Alternative 1B, but locates it to the north of Runway 15-33, and then constructs a partial parallel taxiway to Runway 6-24 and aligns with Taxiway B.

Alternatives 1D and 2 replace the existing alignment with a conventional full parallel taxiway alignment for Runway 15-33. Similar to Alternative 1B, these alternatives cross Runway 6-24 in the “high energy” portion of the runway.

Alternative 3 is similar to Alternatives 1D, and 2, but would be extended to align with the relocated end of Runway 33.

Alternative 4 is similar to Alternative 3, but it would align with the relocated end of Runway 15.

Alternatives 1B, 1C, 1D, 2, 3, and 4 all would have extensive amounts of new construction and impacts to Priority Habitat, as well as high costs. Therefore, they have been eliminated from consideration.

3.1.8 Regrade Runway 6-24 Side Safety Areas

During design of the recent Runway 6-24 rehabilitation, it was determined that the runway safety area side slopes do not meet FAA grading criteria outlined in Advisory Circular (AC) 150/5300-13A throughout the length of the entire runway on both sides. The total acreage of the area to be re-graded is approximately 26.4 acres, all within Priority Habitat. Refer to **Figure 3-14**.

No-Build (Preferred)

The FAA Airport Design Advisory Circular states the side safety areas, which extend 200 feet off each side edge of pavement into the grass, should be: clear and graded and have no hazardous ruts, humps, depressions, or other surface variations; drained by grading or storm sewers to prevent water accumulation; capable under dry conditions of supporting snow removal equipment, aircraft rescue firefighting equipment, and the occasional passage of aircraft without causing damage to the aircraft; and free of objects, except those required because of their function, greater than 3 inches above grade. The No-Build does not meet the FAA standards because it is not graded properly, but it meets the functional requirements, i.e., it lacks hazardous surface variations, rarely has water accumulation, is capable of supporting equipment, and is free of objects.

The FAA has a procedure outlined in FAA Order 5300.1 “Modifications to Agency Design, Construction, and Equipment Standards” that allow airports to request FAA approval for non-compliant conditions to remain. Surface Gradient standards are a standard that can obtain Modification of Standards. The Airport will submit a

request to the FAA, and if approved, regrading will not be required, and the No-Build Alternative will be selected. If the modification of standards is not approved by the FAA, the side safety areas will require regrading and the preferred alternative will need to be revised. Because the existing conditions meets FAA's functional requirements for safety areas, and because it is believed the Modification of Standards will be approved, the No-Build Alternative is the preferred alternative.

Build Alternative – Regrade Safety Area

This alternative includes regrading the turf to meet FAA safety area design guidelines. Redesigning the runway side safety areas to meet these criteria results in approximately 26.4 acres of grading around the runway within Priority Habitat. This alternative would cost approximately \$3.6 million to construct.

3.1.9 Terminal Building Renovation

The existing Airport terminal building was constructed in 1999. Since that time the airline industry and airport experience have undergone significant changes. Since the events of September 11, 2001, many changes to airport security and baggage and passenger screening, and the location of airport concessions. Prior to September 11, 2001, "meeters and greeters" could congregate post-security and people could freely travel back and forth through the security checkpoint. This reduced the amount of concessions and passenger amenities such as restrooms, and other services that airports provided.

Additionally, many systems have neared the ends of their service lives. These include HVAC, electrical, and security and access control systems. Changes to Airport security include larger screened passenger hold rooms and larger areas for the screening of passengers and baggage.

Changes to the airline industry include modifying the size of aircraft utilized by commercial service airlines and reductions in on-aircraft catering. These changes have required increases to screened passenger hold rooms, and more concessions and rest rooms post-security.

Terminal alternatives are shown in **Figures 3-19 through 3-21**.

No-Build

The No-Build option leave the current terminal building unmodified. The Airport will be required to perform updates to systems and will be required to continue to hold screened passengers in an unconditioned tent without restrooms, and concessions limited to vending machines.

Build Alternative 1 – Preserve and Renovate

Alternative 1 includes the preservation and renovation of the majority of the existing structure, augmented with the functional space necessary to meet the current capacity and safety needs of the Airport. Renovation would include updating internal communications and technology, along with replacement of aging heating, ventilation, and cooling (HVAC) equipment and meeting other required codes. The facility's power capacity and security would also be updated to meet today's needs. The majority of the improvements would be internal, or beyond Transportation Safety Administration (TSA) security screening, and not able to be viewed from the curb line. This option seemed most logical in nature and resulted in two more refined alternatives.

Build Alternative 1A – Preserve and Renovate – Seasonal (Preferred Alternative)

Alternative 1A includes the preservation and renovation of the majority of the existing structure and augments it with necessary functional space to meet the current capacity and safety needs of the Airport. The current TSA security screening area would be shifted back behind the terminal building to make room available for passenger

queueing and TSA offices. The existing airline offices and break room would be reoriented to allow for baggage to be transferred from the ticket area to TSA baggage screening in the rear of the building. The existing seasonal vinyl tent and port-a-potties, along with a paved area used to park equipment located in the rear of the building, would be replaced with a permanent structure with adequate seating, air conditioning, and restrooms to accommodate the existing passenger loads. An area will be designated for Cape Air, an air carrier which operates year-round, to provide a heated waiting area for non-secure passengers. Currently Cape Air's waiting area is an outdoor pavilion located to the plan-right of the terminal building.

A new three-season pavilion will be erected behind the existing courtyard to accommodate the seasonal peak in arrival baggage. The existing baggage claim area will be upgraded with energy saving measures to maintain operation within the winter months.

A new air-lock vestibule will be constructed on the front of the terminal building beneath an existing overhang to meet the state law requirement for building code efficiency.

Preserving the look and feel of the facility, renovation would include updating internal communications and technology, along with replacement of aging heating, ventilation, and cooling (HVAC) equipment and meeting other required codes. The facility's power capacity and security would also be updated to meet today's needs. The majority of the improvements would be internal, or to the airfield side of the existing terminal building, and not able to be viewed from the curb line. The total cost of this alternative would be \$16.9 million.

Because this alternative provides the space and services needed to meet current and projected needs, it is the preferred alternative.

Build Alternative 1B – Preserve and Renovate – Year Round

Much like Alternative 1A, Alternative 1B includes the preservation and renovation of the majority of the existing structure and augments it with necessary functional space to meet the current capacity and safety needs of the Airport.

The current TSA security screening area would be oriented in the most efficient configuration to screen passengers albeit reducing the non-secured waiting area and separating the spaces allocated for TSA offices. This TSA orientation reduces the amount of space allocated to passenger queueing and creates a pinch point in the flow of the building as congestion builds while visitors patronize the restrooms and the restaurant. This provides more space for the passenger hold room which replaces the existing seasonal vinyl tent and port-a-potties, along with a paved area used to park equipment located in the rear of the building, which would be replaced with a permanent structure with adequate seating, air conditioning, and restrooms to accommodate the existing passenger loads.

Airline offices remain in the same configuration as Alternative 1A to address the TSA baggage screening operation in the rear of the building.

Alternative 1B includes the option of encompassing the existing courtyard with a permanent structure and elongating the arrival baggage claim area with a mechanical baggage carousel. This alternative would be visible from the existing curb line and create the larger conditioned space in the arrival baggage area that would require heating during winter months when passenger volumes are at their lowest.

A new three-season pavilion will be erected behind the courtyard to accommodate the seasonal peak in arrival baggage claim. The existing baggage claim area will be upgraded with energy saving measures to maintain operation within the winter months.

A new air-lock vestibule would be constructed on the front the terminal building beneath an existing overhang to meet the state law requirement for building code efficiency.

Preserving the look and feel of the facility, renovation would include updating internal communications and technology, along with replacement of aging heating, ventilation, and cooling (HVAC) equipment and meeting other required codes. The facility's power capacity and security would also be updated to meet today's needs.

Build Alternative 2 – Preserve Central Corridor and Renovate

The objective of Alternative 2 is to preserve the central corridor which is identified as the main lobby area and remove the remaining portions of the building to start new. As an attempt to preserve the positive features of the structure, this option is costly and would create a large disruption to operations along with likely visual changes of the building from the curb line. This option was dismissed early in the process and was not further refined.

Build Alternative 3 – Remove and Replace

This alternative removes the existing structure and starts new from the ground up. In addition to the greatest cost, this option would result in the greatest visual change from the curb line and create the largest disruption to operations. This option was dismissed from consideration early in the design process.

3.1.10 Access Road Improvements

At the intersection of Airport Road and Edgartown-West Tisbury Road, traffic is constant and often causes a queue on both roads. Making the left turn from Airport Road onto Edgartown-West Tisbury Road is often difficult, which causes a backup of vehicles waiting to turn both left and right since Airport Road is currently one lane. For vehicles traveling east on Edgartown-West Tisbury Road, the single lane causes a wait when a vehicle attempts to make a left turn onto Airport Road and vehicles traveling east cannot pass. To mitigate the traffic backup, four different traffic alternatives were considered.

No-Build

Level of Service (LOS) is a term used to characterize the operational conditions of a traffic facility and their perception by motorists and/or passengers at a point in time. Numerous factors contribute to a facility's LOS index including travel delay, speed, congestion, driver discomfort, convenience, and safety based on a comparison of the facility's capacity to the facility's demand. The alphabetic designations A through F define the six levels of service. LOS A represents very good traffic operating conditions with minimal delays while LOS F depicts poor traffic operating conditions with excessive delays and queues that are unacceptable to most motorists.

The Level of Service at this intersection is currently an F with observed queue lengths frequently over 300 feet, and a modeled 95th percentile (design) queue length of 625 feet². The No Build would not improve these conditions.

² See the 2020 *Surface Transportation Study* by McFarland-Johnson, Inc., included in Appendix G.

Build Alternative 1 – Right-Turn Lane (Preferred Alternative)

The first alternative (**Figure 3-15**) is a new right-turn lane on Airport Road for turns onto Edgartown-West Tisbury Road. The purpose of this alternative is to reduce the queue on Airport Road by filtering out the right-hand turn vehicles and shortening the queue. This alternative disturbs a total area of 0.3 acre in non-Priority Habitat. The right turn lane partially meets the need by reducing the wait time on Airport Road. The queue is reduced both in the immediate condition and during the design year of 2029. This alternative would cost approximately \$608,000 to design and construct. This incremental improvement is the preferred alternative since it provides reduced wait time, causes the least amount of land disturbance and net new impervious surface, and is less costly than other alternatives. It also does not require any construction in Priority Habitat.

Build Alternative 2 – Roundabout

The next traffic alternative (**Figure 3-16**) is adding a roundabout at the intersection. The roundabout would have one lane and three entry/exit points: two for Edgartown-West Tisbury Road and one for Airport Road. The roundabout design would disturb a total of 1.8 acres, including 0.2 acre of temporary disturbance in Priority Habitat and 1.6 acres of disturbance area in non-Priority Habitat, including 1.2 acres of regrading existing ground. The net new impervious of this alternative is 0.2 acre. While this alternative provides the greatest improvement to traffic exiting the Airport, it slightly reduces the level of service for through traffic on Edgartown-West Tisbury Road. This alternative would cost approximately \$2.3 million to design and construct. This alternative also requires construction within Priority Habitat, and while this alternative could ultimately be required, it is being eliminated due to loss of habitat and reduced travel efficiency on the main road.

Build Alternative 3 – Connector Road

The third build alternative (**Figure 3-17**) is widening and paving the service road, Fire Road 53. Fire Road 53 is currently a gravel connector service road between Airport Road and Fire Road 55. This alternative aims to reduce the traffic at the intersection of Airport Road and Edgartown-West Tisbury Road by diverting a portion of the left turning vehicles from Airport Road to Fire Road 55.

The temporary disturbance to vegetated land would be 2.5 acres, with 1.0 acre within Priority Habitat and 1.5 acres in non-Priority Habitat. Construction will add 1.0 acres of new impervious. This alternative partially meets the need by reducing the number of vehicles attempting to turn left from Airport Road but will not help those who are traveling east on Edgartown-West Tisbury Road. This alternative would cost approximately \$3.6 million to design and construct. This alternative is being eliminated due to the loss of habitat.

Build Alternative 4 – Left-Turn Lane

The final traffic alternative (**Figure 3-18**) would add a left-turn lane on Edgartown-West Tisbury Road by widening the road. This would also create a right-turn lane when traveling west on the road. There would be a relatively small amount of habitat disturbance and new impervious surface. This alternative partially meets the need by reducing the traffic backup when traveling east on Edgartown-West Tisbury Road by allowing non-turning vehicles to pass. However, the wait on Airport Road would remain the same. This alternative would cost approximately \$787,000 to design and construct. This alternative is being eliminated since it does not improve the Level of Service for vehicles exiting the Airport.

3.1.11 Aircraft Parking and Movement Areas

Currently the Airport has four paved aprons for aircraft parking (approximately 556,000 square feet total pavement and 513,000 square feet of space useable for aircraft parking): the Southeast Ramp, North Ramp, Restaurant Ramp, and the Transient Tie-Down Ramps. The Transient Ramps include the paved tie-downs and the

unpaved Turf Tie-Down Area. The Southwest Ramp refers to the paved Transient Tie-Down Ramp and the adjacent area occupied by hangars and pavement. (Note: All of these have at times been referred to as “aprons,” and the terms apron and ramp are interchangeable.)

As detailed in Chapter 2, the Airport has seen a reduction in usable apron area for General Aviation over the last few years, due to changes in Taxiway Object Free Area requirements, implementation of a no-taxi apron Island across from Taxiway C, construction of a fire lane in front of the new Aircraft Rescue and Fire Fighting building, and a doubling of the existing Security Identification Display Area (SIDA). The Master Plan Update estimated there was 671,440 square feet of apron space, and approximately 158,000 square feet of useable space has been lost, leaving approximately 513,000 square feet of space available for aircraft parking and movement. The Airport needs to replace that lost apron area for parking and movement of aircraft to maintain the existing operations.

Several alternatives have been developed to address these deficiencies.

No-Build

The No-Build alternative would not replace the apron area that has been lost over the past several years. This reduction in parking equates to loss of income from tie-down fees, fueling, and other services.

Build Alternative 1A – Pave Transient Turf Tie-Down Area

The transient turf tie-down is located southwest of Taxiway D and has approximately 28 parking positions. Alternative 1A (**Figure 3-22**) includes the paving of the existing turf tie-down area and reconfiguring the layout to maximize aircraft parking. The reconfiguration improves the layout and efficiency and results in 12 additional parking positions for a total of 40 spaces. This would add an additional 5.1 acres of new impervious surface in Priority Habitat. Due to this reconfiguration, portions of the gravel access road between the Southwest Apron and the fuel farm could be removed, making the net new impervious area 4.8 acres. While this alternative provides additional spaces for the Group I aircraft, it does not provide any additional spaces for Group II or larger aircraft.

The cost to design and construct this paved tie-down area is approximately \$4.6 million. This alternative is being eliminated since it does not satisfy the need for additional Group II and larger aircraft spaces.

Build Alternative 1B – Pave Transient Turf Tie-Down Area with Reduced Pavement

Alternative 1B (**Figure 3-23**) is a modification of Alternative 1A and provides the same number of additional parking positions while requiring less impervious surface and less impacts to habitat. However, similar to Alternative 1A, it provides more spaces for the Group I aircraft but does not provide any additional spaces for Group II or larger aircraft. The reduced paving of the tie-down area would add approximately 3.9 acres of new impervious surface. Like the last alternative, a portion of the access road to the fuel farm will be removed and a new access point would be added to the tie-down area. The cost of design and construction would be approximately \$4.0 million. This alternative is being eliminated since it does not satisfy the need for additional Group II and larger aircraft spaces.

Build Alternative 2A – Reconfigure Existing Southeast Ramp

Reconfiguring the Southeast Ramp is the third aircraft parking alternative (**Figure 3-24**). This alternative includes the removal of the existing pavement markings and a reconfiguration of the apron, creating space for eleven Group II aircraft tie-downs and 2 spaces for an aircraft as large as a Cessna Citation X. The alternative also reconfigures the apron so that hangars may be added to the side opposite of Taxiway A. There would be a net decrease of 0.6 acre impervious, with only pavement being disturbed. The cost of this alternative is

approximately \$684,000. This alternative partially meets the Airport needs in adding additional aircraft parking, but it is eliminated as it does not add as many parking spaces as the Airport needs.

Build Alternative 2B – New Stub Taxiway on Southeast Ramp (Preferred Alternative)

Build Alternative 2B (**Figure 3-25**) includes the addition of a stub taxiway to the Southeast Ramp to provide for more spaces for larger aircraft while still providing a taxilane to be used for future hangar access. Reconstructing the Southeast ramp would create nine tie-down spaces for Group II aircraft, and five spaces for a Cessna Citation X. This alternative has a net decrease of 0.4 acre of impervious surface and disturbs approximately 0.3 acre of grass within Priority Habitat. The additional spaces meet the need of the Airport more than the previous alternatives in that there are more spaces for larger aircraft, but additional spaces would still be needed after construction. The cost of this alternative is approximately \$1.1 million. This is a preferred alternative, along with Alternative 3 below.

Build Alternative 3 – Reconfigure Southwest Ramp (Preferred Alternative)

The sixth and final alternative (**Figures 3-26 and 3-27**) includes the reconfiguration of the current space of the Southwest Ramp. The Southwest Ramp is located just south of Taxiway D and contains approximately 48 tie-down spaces (also identified as the Transient Tie-Down Ramp). The Southwest Ramp also includes the area southeast of the tie-down spaces, where there are currently four buildings and a parking lot with a taxilane that provides access to additional existing hangars. This alternative includes the removal of the four existing buildings, parking lot, and adjacent vegetated areas and provides a completely paved apron area. Three of the four buildings are currently used for equipment storage which the Airport has determined can be eliminated or accommodated elsewhere. The fourth building is owned by the tenant of a leased parcel, and the lease's term ends in 2025. Removal of the four buildings would reduce hangar space by approximately 21,700 square feet.

The new apron area would accommodate approximately 33 General Aviation aircraft, allowing larger aircraft to park on the existing apron. Adjacent to the pavement would be a 56-space parking lot for those who need to access their tie-downs or hangars. Reconfiguring this apron would add approximately 2.2 acres of new impervious surface and temporarily disturb 0.2 acre of vegetated land, mostly within non-Priority Habitat. The layout shown on the figures would provide an additional 4.44 acres or 193,400 square feet of apron space with 33 Group I aircraft tie-downs. This is somewhat more than current demand dictates and is proposed to provide the Airport with the flexibility to adjust the size and configuration of the newly paved Southwest Ramp to accommodate the Airport's demands closer to the time of construction. This alternative meets the needs of the Airport by providing additional parking space for the Airport. Because it meets aircraft parking needs, it is a preferred alternative. The cost of design and construction of this alternative would be approximately \$4.2 million.

3.2 PROPOSED ACTION

The Proposed Action is summarized below in **Table 3-4**.

Table 3-4 Proposed Action

Construction Year	Project	Preferred Alternative	Description	Total Cost ¹
2021	Business Park Lots 34 and 38	1	Obtain approvals for previously developed Business Park lots; 1.2 acres impervious surface in Priority Habitat	NA
2022	Improve Fuel Farm Access and Safety	3	Convert gravel fuel farm pad to pavement and pave gravel access road, replace oil water separator	830,000
2022	Aircraft Hangar Development	2	Construct two new hangars; 1.0 acre new impervious in Priority Habitat	\$6.7 million
2023	Airspace Vegetation Management, Runway 6-24	4A, 4B	Remove tree obstructions. Including Runway 15-33, would be 32.9 acres, 29.7 on airport or easements, 3.2 acres in State Forest/no easement	\$1.3 million
2023	Runway 15-33 and Taxiway E Reconstruction, and Vegetation Management	5-5	Reconstruct runway and taxiway, remove shoulders, displace Runway 15 threshold 275'; extend and reconfigure taxiway; net removal of 6 acres impervious	\$10.4 million
2028	Terminal Building Renovation	7-1A	Construct miscellaneous terminal building improvements, mainly within existing terminal use areas	\$16.9 million
2029	Aircraft Parking and Movement Areas	9-2B, 9-3	Construct new stub taxiway to Southeast Ramp; remove four buildings and expand apron area within Southwest Ramp	\$5.3 million
2030	Access Road Improvements	8-1	Construct a right-turn lane on Airport Road exiting Airport	\$608,000

1. Total cost includes both design and construction estimates.