MOHAWK VALLEY HEALTH SYSTEM ("MVHS")
INTEGRATED HEALTH CAMPUS ("IHC")
STATE ENVIRONMENTAL QUALITY REVIEW ACT ("SEQRA")
FINAL SCOPING DOCUMENT
FOR
DRAFT ENVIRONMENTAL IMPACT STATEMENT

1.1 INTRODUCTION

Pursuant to New York State Environmental Conservation Law Article 8 (State Environmental Quality Review Act, "SEQRA"), Part 617 of Chapter 6 of the New York Code of Rules and Regulations, and the adoption of a Notice of Determination of Significance" ("Positive Declaration") by the City of Utica Planning Board, acting as SEQRA Lead Agency in a coordinated review process, the City of Utica Planning Board intends to prepare a Draft Environmental Impact Statement ("DEIS") for the Integrated Health Campus Project ("IHC Project") proposed by the Mohawk Valley Health System ("MVHS" or "Project Sponsor"). In accordance with SEQRA, the DEIS is required to address specific adverse environmental impacts, which can be reasonably anticipated.

Pursuant to SEQRA implementing regulations (6 NYCRR § 617.9(a)(1)), the Project Sponsor or the Lead Agency, at the Project Sponsor's option, will prepare the DEIS. As the Project Sponsor, MVHS prepared a Draft Scoping Document. The primary goals of scoping are to focus the DEIS on potentially significant adverse impacts and to eliminate consideration of those impacts that are irrelevant or nonsignificant. In accordance with SEQRA implementing regulations (6 NYCRR § 617.8), the Draft Scoping Document contained the following information:

- A brief description of the proposed action (Section 1.3)
- The potentially significant adverse impacts identified in the "Positive Declaration" and as a result of consultation with the other involved agencies and the public, including an identification of those aspects of the environmental setting that may be impacted (Section 1.4)
- The extent and quality of information needed for the preparer to adequately address each impact, including an identification of relevant existing information, and required new information, including the required methodology(ies) for obtaining new information (Section 1.4)
- An initial identification of mitigation measures to avoid or minimize adverse environmental impacts (Section 1.4)
- The reasonable alternatives to be considered (Section 1.9)
- An identification of the information/data that should be included in an appendix rather than the body of the DEIS (Section 1.10)

As Lead Agency, the City Planning Board made available a copy of the Draft Scoping Document via filing and public notice, in addition to posting it on the Project's website. The Draft Scoping Document was also made available to all involved agencies and to any individual or interested agency that has expressed an interest in writing to the Lead Agency. Involved agencies were requested to provide written comments reflecting their concerns, jurisdictions and informational needs sufficient to ensure that the EIS will be adequate to support their SEQRA Findings[1].

[1] SEQRA Findings (Findings Statement) means a written statement prepared by each involved agency, in accordance with SEQRA implementing regulations (6 NYCRR § 617.11), after a final EIS has been filed, that considers the relevant environmental impacts presented in an EIS, weighs and balances them with social, economic and other essential considerations, provides a rationale for the agency's decision and certifies that the SEQRA requirements have been met.

The scoping process also included an opportunity for public participation. Written comments were accepted by the Lead Agency at the address noted below from May 18, 2018 to June 20, 2018.

City of Utica Planning Board
Attention: Mr. Brian Thomas, Commissioner
City of Utica, Department of Urban & Economic Development
1 Kennedy Plaza
Utica, NY 13502
Phone Number: (315) 792-0181
Email: bthomas@cityofutica.com

In addition, the City Planning Board scheduled a public scoping meeting, which was held on June 7, 2018 at the New York State Office Building (Conference Rooms A and B), 207 Genesee Street, Utica, New York 13501. Oral comments received at the public scoping meeting were recorded.

This document represents the Final Scoping Document. The Final Scoping Document was issued by the City Planning Board, as SEQRA Lead Agency, and incorporates substantive comments received during the public and agency comment period. The Final Scoping Document also identifies those prominent issues that were raised during scoping and determined by the Lead Agency to be not relevant or not environmentally significant or that have been adequately addressed in prior environmental review (Section 1.11).

All relevant issues should have been raised before the issuance of a final written scope. Any agency or person raising issues after that time must provide to the Lead Agency and Project Sponsor a written statement that identifies:

- The nature of the information
- The importance and relevance of the information to a potential significant impact
- The reason(s) why the information was not identified during scoping and why it should be included at this stage of the review

The Project Sponsor may incorporate information submitted after the issuance of a final written scope into the DEIS at its discretion. Any substantive information not incorporated into the DEIS must be considered as public comment on the DEIS.

Information on the project and scoping process, including Draft and Final Scoping Documents, received written comments, the public scoping hearing transcript, and a summary of comments on the Draft Scoping Document, are available on the project's SEQRA website (http://www.cityofutica.com/departments/urban-and-economic-development/planning/mvhs-seqra/index). The project website is also accessible from the City of Utica's home page (http://www.cityofutica.com/).

1.2 PROJECT PURPOSE

Faxton St. Luke's Healthcare ("FSLH") and St. Elizabeth Medical Center ("SEMC") affiliated in 2014 to become MVHS[2]. MVHS's mission is to provide excellence in healthcare for its communities. Substantial effort has been focused on consolidating existing resources, eliminating redundancies, expanding the depth and breadth of services, improving access and elevating the quality of healthcare services in the region. MVHS has been

[2] Mohawk Valley Health System is the Sole Corporate Member of Faxton-St. Luke`s Healthcare, St. Elizabeth Medical Center, St. Luke's Home Residential Health Care Facility, Senior Network Health, LLC, Visiting Nurse Association of Utica and Oneida County, Inc., and Mohawk Valley Home Care, LLC. Together, the system is governed by one Board of Directors. As referenced in its certificate of need application for construction of the new hospital, MVHS plans to apply for a certificate of need from the Department of Health pursuant to Article 28 of the Public Health Law pursuant to which it also would be the sole operator of the new integrated hospital campus.

successful in its efforts thus far, but has been constrained by the age and physical limitations of the existing facilities.

As summarized below, FSLH and SEMC are currently comprised of three locations (see Figure 1).

FSLH Campus Locations	SEMC Campus Location
St. Luke's Campus 1656 Champlain Avenue Utica, NY	SEMC Campus 2209 Genesee Street Utica, NY
Faxton Campus 1676 Sunset Avenue (1675 Bennett Street) Utica, NY	

To support goals to deliver higher quality, more effective care with better community outcomes and at a lower cost, the proposed MVHS IHC, will combine services from both St. Luke's and SEMC. The new MVHS IHC and hospital will replace the St. Luke's and SEMC campuses, reduce the number of beds in the community, and consolidate patient services to one campus; Faxton Campus services will not move to the new IHC.

The decision to consolidate these two campuses to a single facility was motivated by several key factors:

- The desire and need to build a facility with the newest technology, services and advancements in patient safety and quality so that our community can receive the most up-to-date healthcare services that rivals those found in large cities
- The growing demand for healthcare due to the rapidly increasing and aging population in this region[3]
- The increasing need to improve accessibility and availability by attracting specialists and providing services that otherwise would not be available to our community
- The opportunity to gain greater operational efficiencies through the elimination of duplicative and redundant functions will help to reduce the rate of increase in healthcare spending and to achieve improved financial stability

The project also includes a proposed collaborative affiliation between MVHS and the Masonic Medical Research Laboratory. Research space is proposed within the new hospital that will allow Masonic laboratory researchers working behind the lab bench and MVHS clinicians working at patients' bedsides to collaborate and create new and innovative research and clinical benefits for the Mohawk Valley and beyond.

Funding for the project has been provided, in part, by New York State via the Oneida County Health Care Facility Transformation Program, which provided capital funding ($300 million) "in support of projects located in the largest population center in Oneida County that consolidate multiple licensed health care facilities into an integrated system of care." (https://www.nysenate.gov/legislation/laws/PBH/2825-B)

1.3 PROJECT DESCRIPTION

The "Project Description" section of the DEIS will contain the following information:

- The purpose or objective of the action, including any public need for, or public benefits from the action, including social and economic considerations
- The location and physical dimensions of the action
- The background and history of the action
- Timing and schedule for implementing the action, including construction and operations phases, to the extent the information is available, or can reasonably be estimated

[3] Demographic data will be presented in the DEIS.

- Relationship of the action to land use plans, zoning restrictions, and other adopted plans and programs at the local, regional or state level
- Identification of authorizations, permits and approvals required.

As depicted on Figure 2 (Site Location Map), the MVHS IHC will generally be bounded by Oriskany Boulevard (NYS Route 69) to the north, Broadway to the east, Columbia Street and NYS Route 8 to the west, and City Hall and Kennedy Apartments to the south. The proposed location is proximal to the City's urban core, as well as the City's proposed "U" District, existing Brewery District, Bagg's Square and Utica Harbor Point. The MVHS IHC will encompass approximately 25-acres and will include the following elements:

- Hospital building
- Central utility plant
- Parking facilities (including one municipal parking garage and multiple surface lots)
- Potential future medical office building (by private developer)
- Campus grounds
- Hospital Heliport

To accommodate the proposed MVHS IHC, the proposed project will involve the acquisition of properties and modifications to existing public/private utility infrastructure.

Descriptions of the project elements are provided below, as well as a description of the intended future use of the two existing St. Luke's and SEMC campuses. These descriptions represent the project as currently envisioned.

HOSPITAL BUILDING

The proposed ±670,000 square foot (sf) hospital building will be constructed on parcels located west of Broadway and will extend through Cornelia Street onto parcels located east of State Street. The hospital building consists of a 2-story podium and a 7-story bed tower.

The main entrance to the hospital will be located south of Lafayette Street, proximal to Cornelia Street. In addition to the main entrance, Emergency Department ("ED") walk-in and ED ambulance entrances will be located on the western portion of the hospital. Vehicular and pedestrian entries will be marked by canopy systems that provide adequate coverage for public drop off, ED walk-in and loading activities. Ambulance traffic will be provided with a large drive-thru canopy adjoined to the podium.

A service entrance will be located on the eastern portion of the hospital building, which will be accessible via Columbia Street.

Most services[4] currently provided at the St. Luke's and SEMC campuses will be transitioned to the MVHS IHC including ±373 inpatient beds.[5]

CENTRAL UTILITY PLANT

A three-story Central Utility Plant ("CUP") will service the hospital. The CUP will adjoin the eastern portion of the podium of the hospital building. The CUP will house three centrifugal chillers, a heat recovery chiller and four steam and eight hot water heating condensing boilers, each which will be fueled by both natural gas and No. 2 Fuel oil. A 50,000-gallon underground storage tank ("UST") used to store the No. 2 fuel oil will be installed south of the CUP in the service yard. A 30,000-gallon aboveground storage tank ("AST") used to store emergency water for fire protection will also be located in the service yard.

[4] Proposed services will be identified in the "Project Description" section of the DEIS.

[5] Justification of the number of proposed beds will be provided in the "Project Description" section of the DEIS.

PARKING FACILITIES

Parking facilities will consist of a three-story, municipally-owned parking garage and multiple parking lots. The parking garage will provide approximately 1550 parking spaces and the parking lots will allow for an additional ±1100 parking spaces. These parking facilities will be available for use by patients, visitors, staff, and volunteers, as well as the community for non-hospital related events.

POTENTIAL FUTURE MEDICAL OFFICE BUILDING

A future medical office building is proposed. It is anticipated that the medical office building would be owned and operated by a private developer. As illustrated on Figure 2, the proposed location of the medical office building is south of Columbia Street and east of Cornelia Street.

CAMPUS GROUNDS

The campus will be designed as an urban park with enhanced lighting, trees, pedestrian walkways and seating areas. A pedestrian walkway will replace a portion of Lafayette Street. This walkway will extend from the main entrance to the west, terminating just adjacent to the North-South Arterial Highway. An additional segment of the walkway will provide access to the ED entrance. Outdoor areas will include gardens and other design considerations to create a healing environment. Connectivity and greenspace considerations will be identified in the DEIS.

HOSPITAL HELIPORT

A Hospital Heliport[6] will be situated to the west of the hospital building, adjacent to the ED ambulance entrance and north of Columbia Street. Approximately 40± annual emergency flights to the hospital are anticipated. The impacts associated with a surface vs. a roof-top/elevated landing will be assessed in the DEIS.

PROPERTY ACQUISITION

The project includes the acquisition of the 25± acres of property in an area of Utica that is designated as a Federal "Historically Underutilized Business" ("HUB") Zone[7], a distressed area and a New York State Department of Environmental Conservation ("NYSDEC") designated "Potential Environmental Justice Area." While it is anticipated that most of the property will be acquired through voluntary negotiation, it is likely that some property may need to be acquired via eminent domain. Many of the existing property owners and businesses will be required to relocate to other parts of Utica or Oneida County. The magnitude of the acquisition of 25+/- acres will be large, but most impacts are expected to be beneficial because it will better position the hospital to serve the largest and most diverse population in Oneida County, as well as creating the potential for secondary economic development opportunities.

STREET CLOSURES

As currently proposed, the project would require the following public street closures or changes in designation:

- Lafayette Street from the North-South Arterial Highway to Broadway will be abandoned by the City
- Cornelia Street from Columbia Street to Oriskany Street will be abandoned by the City
- Carton Avenue, Sayre Alley, and Pine Street will be abandoned by the City
- The former Lafayette Street from Broadway to Cornelia Street will become the main entrance to the IHC

[6] The hospital heliport will be operated as a helistop, which is a minimally developed helicopter facility for boarding and discharging passengers or cargo, without the support facilities found at a traditional heliport.

[7] HUBZone means a historically underutilized business zone, which is an area located within one or more: (1) Qualified census tracts; (2) Qualified non-metropolitan counties; (3) Lands within the external boundaries of an Indian reservation; (4) Qualified base closure areas; (5) Re-designated areas; or (6) Qualified disaster areas.

- The former Cornelia Street from Lafayette Street to Oriskany Street will become the entrance to the new public parking garage and an alternate hospital entrance/exit

UTILITY INFRASTRUCTURE

Based on a preliminary assessment of existing utilities and project needs, modifications to the existing infrastructure in the project area are anticipated. A summary of anticipated modifications is provided below.

Sanitary Sewers

It is anticipated that the existing sanitary sewer line within the right-of-way ("ROW") of Cornelia Street between Columbia and Lafayette Streets, and in the ROW of Lafayette Street between Cornelia and State Streets, will be abandoned/removed. A new sewer line within the ROW of Columbia Street will be constructed from Cornelia Street to the 48" (diameter) trunk sewer along State Street. A new sewer line would be constructed to divert upstream flow from the south on Cornelia Street to the existing sewer on Broadway via a rehabilitated existing or newly constructed sewer in Columbia Street between Cornelia Street and Broadway. Other potential new sewer lines may be needed along Lafayette Street, abutting the north side of the hospital.

The location and size of sanitary laterals and connections will depend on the plumbing/mechanical design of the new hospital buildings. It is assumed each new structure will have its own service lateral(s) connecting to the City mains.

Wastewater associated with hospital operations is anticipated to be ±187,000 gallons per day (gpd) and will be discharged to Oneida County's Water Pollution Control Plant via City sanitary sewers and Oneida County interceptor sewers.

Storm Sewers

The overall percent impervious surfaces resulting from development of the IHC is anticipated to be less than the amount of coverage under existing conditions. In addition, the buildings and paved impervious surface areas of the MVHS IHC may be further minimized or reduced using "Green Infrastructure" design features such as pervious pavement/pavers, planting beds, and subsurface rainwater detention.

It is anticipated that the existing storm sewer lines within the ROW of Cornelia Street between Columbia and Lafayette Streets will be abandoned/removed. Removal of portions of storm sewer lines may also be required along Lafayette Street between Cornelia and State Streets. New storm sewer piping will be installed in the ROW along State Street and connect to the existing New York State Department of Transportation ("NYSDOT") storm sewer line, which connects to the north side of Oriskany Street West/Route 5S, west of the Utica Memorial Auditorium ("Aud"). Alternatively, storm sewers will be constructed from the intersection of State Street and Oriskany Street west to the existing storm sewer at Cornelia Street and Oriskany Street. New branch lines will tie-in catch basins along the west end of Columbia Street. Flow from the east side of the campus and upstream flow from Broadway will be conveyed through existing storm sewers in Cornelia Street, north of Lafayette, Lafayette Street east of Cornelia, and Broadway.

Water Mains

Water mains located in the ROW along portions of Lafayette Street may need to be removed/abandoned, as would other smaller mains within the new building footprint. Where new supply mains are required, the older mains would be replaced. Fire hydrants will be located along the public streets and private fire hydrants will be located within the IHC campus, as required for fire protection. Each building will be provided with its own backflow prevention device to comply with Mohawk Valley Water Authority requirements.

Water mains to be replaced or installed include: 1) older 6" and 16" mains on State Street will be replaced with a new 16" water main; 2) a 6"/8" main on Broadway that will be replaced with a 12" pipe connecting large mains on Columbia to Whitesboro Street; 3) 12" water main along Oriskany Street East between State Street and Broadway; and 4) 12" water main (private) along Lafayette Street to serve the IHC.

Electric and Natural Gas

Electric and gas utilities in the area of the proposed IHC are operated and maintained by National Grid. The gas mains and underground electric conductors are owned by National Grid. The underground conduits and vaults are owned by the City of Utica, and leased to National Grid for use.

Both electric and gas assets exist extensively throughout the IHC project footprint, including a 13.2 KV underground feed in Cornelia and Lafayette Streets. All assets, both electric and gas, will need to be relocated out of the IHC footprint, into public rights-of-way; locations are to be determined through on-going coordination between MVHS, National Grid and the City.

INTENDED FUTURE USE OF EXISITING HOSPITALS

Disposition and Repurposing of Existing Hospital Campuses

With the exception of certain existing ancillary facilities within which existing operations will be maintained (see below), MVHS' objective is to facilitate redevelopment of the existing St. Luke's and SEMC campuses consistent with the Town of New Hartford's and the City of Utica's long-term development plans and capable of making an economically positive contribution to each community. In support of this objective, MVHS will be conducting an evaluation of the properties and potential "as-of-right"[8] redevelopment opportunities concurrent with planning for the proposed hospital. In addition to the disposition and redevelopment of the primary facilities, existing ancillary facilities will also be reused. A description of the anticipated continued use of portions of the existing campuses is provided below.

St. Luke's

Most of the inpatient and outpatient services performed at the existing St. Luke's campus will be transitioned to the MVHS downtown IHC. However, it is anticipated that ±24 physical medical and rehabilitation beds, as well as some outpatient services will remain at this site. Unused medical supplies and certain medical equipment will be brought to the MVHS IHC. Medical equipment that is beyond its useful life will be disposed of in accordance with applicable federal and state regulations.

SEMC

The non-hospital buildings located at the SEMC Campus will be converted into an outpatient extension clinic. Services provided at the clinic will include sleep center services, cardiac and thoracic surgery-related physician offices, primary care services and a laboratory patient service center. Unused medical supplies and certain medical equipment will be brought to the MVHS IHC. Medical equipment that is beyond its useful life will be disposed of in accordance with applicable federal and state regulations.

1.4 POTENTIALLY SIGNIFICANT ADVERSE ENVIRONMENTAL IMPACTS

During the Lead Agency Coordination, Notice of Determination, and Scoping processes, potentially significant adverse environmental impacts were identified including both short-term, construction related activities, and long-term impacts associated with the operation of the proposed IHC. The table below identifies these potential impacts by topic and includes the following information for each:

- The potentially significant adverse impacts identified in the "Positive Declaration", and as a result of consultation with the other involved agencies and the public, including an identification of those aspects of the environmental setting that may be impacted
- The extent and quality of information needed to adequately address each impact, including an identification of relevant existing information, and required new information, including the required methodology(ies) for obtaining new information

[8] Consistent with existing zoning designations and regulations.

- An initial identification of mitigation measures to avoid or minimize adverse environmental impacts

Environmental Topic	Potential Significant Adverse Impacts	Information Sources/Needs	Potential Mitigation Measures
Impact on Land (Geology, Soils, Topography)	***Construction*** ■ Physical alteration of >10-acres of land and construction that continues for more than one year or in multiple phases ■ Excavation and removal of more than 1,000 tons of material including removal and disposal of unsuitable fill material and/or impacted soil, if encountered ■ Increase in erosion, whether from physical disturbance or vegetation removal (including from treatment by herbicides) ***Operation*** ■ No significant adverse impacts anticipated; proposed post-construction conditions will result in an increase in pervious greenspace	***Existing Information Sources*** ■ Limited Phase I Environmental Site Assessment (Phase I ESA) ■ Previous geotechnical investigations on properties proximal to the proposed project area ■ Information from the Soil Survey of Oneida County, New York published by the United States Department of Agriculture ("USDA") Natural Resources Conservation Services ("NRCS") and other readily available existing resources (*e.g.,* https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx**)** will be relied on to describe surface (soil) and subsurface (bedrock) conditions ■ Additional desktop/web-based environmental database reviews ***Additional Information Needs*** ■ Topographical survey ■ Subsurface geotechnical investigation (evaluate constructability issues such as depth to bedrock and groundwater, seismicity, soil permeability, erosion potential, *etc.*, as well as potential surface and subsurface impacts associated with past land use)	***Construction*** ■ Obtain coverage under NYSDEC's General Permit for Stormwater Discharges from Construction Activity (GP-0-15-002) ■ Preparation and implementation a of Stormwater Pollution Prevention Plan ("SWPPP") including an Erosion and Sedimentation Control ("E&SC") Plan prepared in accordance with local and State standards to mitigate construction phase stormwater runoff-related impacts ■ Restricting the limits of construction to the minimum practicable area required to complete the work ■ Management (handling and disposal) of impacted soils/subsoils in accordance with applicable local, state and federal requirements ■ Timely and effective restoration of temporarily disturbed areas ■ Constructability issues identified in the geotechnical investigation will be considered in the design of the IHC ***Operation*** ■ Implementation of long-term stormwater management controls to control the rate and quality of runoff prior to leaving the site ■ Use of landscaping to minimize erosion potential

Environmental Topic	Potential Significant Adverse Impacts	Information Sources/Needs	Potential Mitigation Measures
Impact on Geologic Features (*i.e.*, unique or unusual land forms)	Based on review of existing information sources, no unique or unusual land forms were identified within or proximal to the project site.	***Existing Information Sources*** ■ Information from the Web Soil Survey developed by the USDA NRCS (Available at: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx) ■ National Natural Landmarks Program, *National Registry of Natural Landmarks*, June 2009 (https://www.nps.gov/subjects/nnlandmarks/upload/NNLRegistry.pdf)	No significant impacts to geologic features were identified; no mitigation measures are warranted.
Impact on Surface Water	***Construction*** ■ Potential temporary impacts (sediment-laden runoff) to surface waters from demolition/construction activities including ground disturbances (*e.g.,* excavation or installation of utilities), construction of temporary roads and access facilities, grading, and landscaping ■ Potential to encounter impacted surface/groundwater due to past land use(s) ***Operation*** ■ Potential impacts on stormwater runoff including existing combined sewer overflows (CSOs) ■ Potential impacts from outdoor storage of materials (if any) and runoff from impervious areas (including parking lots)	***Existing Information Sources*** ■ NYSDEC's Environmental Resource Mapper (http://www.dec.ny.gov/gis/erm/) ***Additional Information Needs*** ■ Topographical survey ■ Site layout illustrating outdoor storage areas ■ Project grading and E&SC plan ■ Construction sequencing ■ SWPPP ■ Subsurface data	***Construction*** ■ Preparation and implementation of a SWPPP including an E&SC Plan prepared in accordance with local and State standards to mitigate construction phase impacts ■ Management (handling and disposal) of impacted soils/subsoils and groundwater in accordance with applicable local, state and federal requirements ***Operation*** ■ Management of stormwater runoff in accordance with local and state requirements ■ Conveyance of wastewater/sanitary discharges to Oneida County's Water Pollution Control Plant in accordance with the local sewer ordinance

Environmental Topic	Potential Significant Adverse Impacts	Information Sources/Needs	Potential Mitigation Measures
Impact on Groundwater	***Construction*** ■ Potential impacts to groundwater associated with dewatering during construction activities ■ Potential to encounter aboveground and/or underground storage tanks (ASTs and USTS, respectively) during demolition/excavation activities, as well as, impacted soil/groundwater from past land use(s) ***Operation*** ■ Potential impacts relating to the bulk storage of oil/fuel and/or chemicals	***Existing Information Sources*** ■ Information from the Web Soil Survey developed by the USDA NRCS (Available at: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx) and other readily available existing resources will be relied on to describe groundwater conditions ■ Limited Phase I ESA ***Additional Information Needs*** ■ Subsurface data ■ Project-related bulk storage requirements and locations ■ Stormwater management (conceptual design)	***Construction*** ■ Preparation and implementation of a SWPPP including an E&SC Plan prepared in accordance with local and State standards to mitigate construction phase impacts (including a ground water management plan, if encountered) ■ Preparation and implementation of a Construction Health and Safety Plan ("CHASP") to protect construction workers and the community from exposure to potential impacted materials ■ Removal of any encountered ASTs and USTs will be conducted in accordance with NYSDEC-regulated PBS and/or CBS closure requirements, as well as waste characterization, management, handling and disposal, as applicable ***Operation*** ■ Installation and operation of NYSDEC-regulated PBS and/or CBS tanks will be conducted in accordance with applicable NYSDEC regulations, including design requirements including secondary containment, PBS and CBS registration certificates, operation and maintenance requirements. In addition, spill prevention plans (*e.g.,* Spill Prevention, Control and Countermeasure Plan, Spill Prevention Report) will be developed and implemented, as applicable

Environmental Topic	Potential Significant Adverse Impacts	Information Sources/Needs	Potential Mitigation Measures
Impacts on Flooding	***Construction*** Based on review of existing information sources, the proposed project area is not located within a floodway or 100- or 500-year floodplain ***Operation*** ■ Potential increase in stormwater runoff, which could exacerbate flood potential during storm events	***Existing Information Sources*** ■ Federal Emergency Management Agency ("FEMA") Flood Insurance Rate Map ("FIRM") (2013, Community Panel No. 36065C0751F) ***Additional Information Needs*** ■ Stormwater management (conceptual design)	■ Management of stormwater runoff in accordance with local and state requirements
Impact on Air	***Construction*** ■ Dust generation during construction (including demolition activities) ■ Short-term emissions from construction equipment ***Operation*** ■ Operation phase emissions including combustion sources (*e.g.,* boilers, emergency back-up generators) and process sources (*e.g.,* sterilizers, refrigeration equipment) ■ The proposed action will include state regulated air emission sources ■ The action will result in the emission of one or more greenhouse gases in excess of 1000 tons/year of carbon dioxide (CO_2) ■ The proposed action will require a state air facility registration ■ Potential increase in mobile source emissions due to project-related increases in traffic and road closures	***Existing Information Sources*** ■ Sources to identify existing air quality conditions include the NYSDEC, United States Environmental Protection Agency ("USEPA"), and NYSDOT (*i.e.,* existing traffic flow conditions), such as: » United States Environmental Protection Agency. 2018. *Current Nonattainment Counties for All Criteria Pollutants*. Available at: https://www3.epa.gov/airquality/greenbook/ancl.html » New York State Ambient Air Quality Report (NYSDEC, 2016). Available at: https://www.dec.ny.gov/chemical/8536.html ***Additional Information Needs*** ■ Listing of proposed combustion sources, including size and fuel type, and process sources (including exempt/trivial sources) ■ Traffic Impact Study	***Construction*** ■ The contractor(s) will be required to implement measures to minimize impacts including proper maintenance of vehicles and equipment, dust suppression, the use of low sulfur diesel fuel and best available technology to achieve the greatest reduction in particulate emissions ■ Adherence to NYS-required vehicle/equipment idling requirements ***Operation*** ■ Acquisition of and adherence to a NYSDEC-issued air permit/registration

Environmental Topic	Potential Significant Adverse Impacts	Information Sources/Needs	Potential Mitigation Measures
		▪ An assessment of impacts on air quality from exhaust that would be generated by landing helicopters	
Impact on Plants and Animals	***Construction*** Significant adverse impacts to the Northern Long-eared Bat ("NLEB") from construction activities (*e.g.,* tree removal) are not anticipated. ***Operation*** Significant adverse impacts to plants and animals (endangered/threatened, rare, critical habitats) are not anticipated.	***Existing Information Sources*** ▪ United States Fish and Wildlife ("USFWS") Information for Planning and Consultation ("IPaC") website (https://ecos.fws.gov/ipac/). ▪ NYSDEC's New York Nature Explorer. Available at: http://www.dec.ny.gov/natureexplorer/app/;jsessionid=A6A00C61145343FD4309.+p15 ▪ NYSDEC's Environmental Resource Mapper. Available at: http://www.dec.ny.gov/gis/erm/	***Construction*** ▪ Construction planning to minimize work during ecologically sensitive time periods (*e.g.,* tree cutting activities will be restricted to November 1st through March 31st.)
Impacts on Agricultural Resources	Based on review of existing information sources, the proposed project area is not located within a State-designated agricultural district. In addition, the project area does not currently include agricultural land or resources suitable for wide agriculture use.	***Existing Information Sources*** ▪ New York State Agricultural District Boundary Maps for Oneida County. Available at: https://cugir.library.cornell.edu/catalog/cugir-007975 ▪ Information from the Web Soil Survey developed by the USDA NRCS (Available at: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx)	No significant impacts on agricultural resources were identified; no mitigation measures are warranted.

Environmental Topic	Potential Significant Adverse Impacts	Information Sources/Needs	Potential Mitigation Measures
Impacts on Aesthetic Resources (including Lighting Impacts)	***Construction*** ■ Temporary construction-related lighting impacts from mobile sources (*e.g.*, trucks, heavy machinery) ***Operation*** ■ Outdoor lighting will include signage, lamp posts and building-mounted fixtures in exterior parking areas, walkways and entrances to the hospital, hospital heliport operations, and other project-related facilities, as applicable, which may result in light shining onto adjoining properties and creating sky-glow brighter than existing area conditions ■ Potential impacts on viewshed due to the proposed height of the building	***Existing Information Sources*** ■ Utica City Code. Available at: https://ecode360.com/UT2994 ***Additional Information Needs*** ■ Conceptual lighting design (types and locations) ■ Architectural renderings	***Construction*** ■ The project will require approval of a site plan by the City Planning Board, as well as City issuance of building permits based on compliance with the New York State Building Code. ***Operation*** ■ Adherence to New York Building Code requirements including the use and placement of outdoor lighting fixtures that reduce glare and spillover

Environmental Topic	Potential Significant Adverse Impacts	Information Sources/Needs	Potential Mitigation Measures
Impact on Historic and Archaeological Resources	***Construction*** ■ Potential impacts to archaeological resources due to in ground disturbances ***Construction/Operation*** ■ Potential impacts to historic properties located within or substantially contiguous to the IHC project area, including: » parcels listed or eligible for listing on the State or National Registers of Historic Places » parcels located in the Upper Genesee Street Historic District ■ The proposed action will result in the destruction or alteration of all or part of the site or property ■ The proposed action may result in the introduction of visual elements, which are out of character with the site or property, or may alter its setting	***Existing Information Sources*** ■ The New York State Historic Preservation Office ("SHPO") online Cultural Resource Information System ("CRIS"). Available at: https://cris.parks.ny.gov/Login.aspx?ReturnUrl=%2f ***Additional Information Needs*** ■ Historic Structure & Building Inventory Survey ■ Phase 1A Cultural Resource Survey ■ Architectural renderings ■ SHPO consultation	***Construction*** ■ Approval, in consultation with SHPO, of a Programmatic Agreement for the minimization and mitigation of potential adverse effects on historic or archaeological resources ■ Adherence to conditions identified in the Programmatic Agreement
Impacts on Open Space and Recreation	Based on a review of existing information sources, the proposed project area does not currently contain open space or recreational resources.	***Existing Information Sources*** ■ Aerial photography/Site reconnaissance ■ Tax parcel information	No significant impacts on open space and recreation were identified; no mitigation measures are warranted.
Impacts on Critical Environmental Areas ("CEAs")	Based on a review of existing information sources, the proposed project area is not located within a NYSDEC-designated CEA.	***Existing Information Sources*** ■ NYSDEC-identified CEAs available at https://www.dec.ny.gov/permits/6184.html	No significant impacts on CEAs were identified; no mitigation measures are warranted.

Environmental Topic	Potential Significant Adverse Impacts	Information Sources/Needs	Potential Mitigation Measures
Impact on Transportation	***Construction*** ■ Temporary road closures ■ Construction vehicle & equipment/material staging ■ Impacts to bus service (routes, stops) ■ Increased demand for parking (construction workers) ***Operation*** ■ Increased traffic flow and operating conditions, which may exceed capacity of existing road network ■ Impacts to bus service (routes, stops, capacity) ■ Impacts to pedestrian facilities (sidewalk, crosswalks) ■ Increased demand for parking (employees, patients) resulting in the construction of parking area/garage for 500 or more vehicles ■ Alterations to the present pattern of movement of people or goods (including road closures)	***Existing Information Sources*** ■ Traffic flow data compiled by NYSDOT (https://www.dot.ny.gov/divisions/engineering/applications/traffic-data-viewer) ***Additional Information Needs*** ■ Traffic Impact Study with study limits coordinated with NYSDOT and City of Utica ■ Parking analysis ■ Maintenance & Protection of Traffic Plan	***Construction*** ■ Development and implementation of a Maintenance and Protection of Traffic Plan ■ Temporary changes to street signals, signage, and traffic routes ■ Temporary bus lanes or bus stops to account for service disruptions ■ Traffic control personnel (flaggers) ***Operation*** ■ Addition and/or relocation of bus service stops ■ Increase bus fleet to allow for additional capacity ■ Parking regulation modifications ■ Addition of or modification to pedestrian facilities ■ Implementation of road improvements to maintain adequate flow of vehicles on streets (*i.e.*, levels of service) proximal to the project (as specified in the Traffic Impact Study)

Environmental Topic	Potential Significant Adverse Impacts	Information Sources/Needs	Potential Mitigation Measures
Impacts on Utilities	***Construction*** ■ Temporary impacts due to the abandonment/removal; and installation of utilities (*e.g.,* sanitary and storm sewer, water, electric and natural gas). Specific construction-related impacts are identified elsewhere in this scoping document ***Operation*** ■ Although improvements/modifications to the existing utility infrastructure will be necessary to provide adequate services to the IHC, the utility systems themselves currently have sufficient capacity to service the IHV. Therefore, no significant adverse impacts on utility infrastructure capacities are anticipated	***Existing Information Sources*** ■ Existing, readily available information will be relied upon to assess impacts on utilities including a comparison to the current utility needs of St. Luke's and SEMC ***Additional Information Needs*** ■ Will-serve letters from purveyors or other documentation that the project will not result in significant adverse impacts on existing utility capacities	***Construction*** ■ Implementation of E&SC measures during installation of utility improvements ■ Implementation of a Maintenance & Protection of Traffic Plan to maintain traffic flow during installation of utilities within road ROWs (including acquisition of highway work permits from jurisdictional authorities) ***Operation*** No significant impacts on utilities from operation of the project were identified; no mitigation measures are warranted.

Environmental Topic	Potential Significant Adverse Impacts	Information Sources/Needs	Potential Mitigation Measures
Impacts on Energy (Including the Use and Conservation of Energy)	***Construction*** Significant adverse impacts to energy are not anticipated. ***Operation*** ■ The peak electrical demand load for the proposed MVHS IHC is estimated to be 4.2 Megavolt-Amperes ("MVA"). Although upgrades to the exiting electrical distribution system may be required to adequately service the IHC, the electrical demand is not anticipated to significantly impact the grid ■ The proposed action will involve heating and/or cooling of more than 100,000 sf of building area when completed ■ Diesel-fueled emergency generators will also be used at the proposed MVHS IHC	***Existing Information Sources*** ■ Existing, readily available information will be relied upon to assess impacts on energy including comparisons to the current energy consumption of St. Luke's and SEMC; energy impacts associated with the adaptive reuse of existing MVHS facilities will also be assessed ***Additional Information Needs*** ■ Estimated energy usage information, including any need to upgrade existing services, will be obtained from National Grid ■ Energy conservation efforts (including LEED certification requirements, if applicable)	***Construction*** ■ Implementation of E&SC measures during installation of utility improvements ***Operation*** ■ Implementation of energy-saving measures (*e.g.*, LEED certification), if applicable

Environmental Topic	Potential Significant Adverse Impacts	Information Sources/Needs	Potential Mitigation Measures
Impact on Noise and Odor	***Construction*** Temporary construction-related noise impacts from the following: ■ Equipment necessary to prepare the project area (including demolition) and construct the proposed MVHS IHC ■ Vehicles and equipment accessing and egressing the site including trucks hauling C&D debris for off-site management ■ Temporary power generators Significant adverse odor impacts are not anticipated. ***Operation*** ■ Sporadic noise in excess of existing ambient levels during operation may be generated by incoming ambulances and helicopter flights ■ Significant adverse odor impacts are not anticipated.	***Existing Information Sources*** ■ Existing, readily available information will be relied upon to assess noise and odor impacts (including construction equipment noise data published on the internet) ■ Utica City Code. Available at: https://ecode360.com/UT2994 ***Additional Information Needs*** ■ Identification of construction and operation phase noise sources ■ Identification of construction and operation phase odor sources. ■ Traffic Impact Study ■ Proposed operational equipment needs, quantities, and locations ■ Projected number of annual helicopter flights	***Construction*** ■ Noise impacts will be short-term and intermittent and mitigated through implementation of controls identified in the DEIS which may include: » Adherence to a City-approved construction schedule (The NYSDEC Program Policy "Assessing and Mitigating Noise Impacts" suggests that limiting activity to normal workday hours is an effective mitigation measure) » Use and maintenance of appropriate mufflers on vehicles and equipment » Compliance with the municipal noise ordinance and City code requirements ***Operation*** ■ Compliance with City Code requirements

Environmental Topic	Potential Significant Adverse Impacts	Information Sources/Needs	Potential Mitigation Measures
Impact on Human Health	***Construction*** ■ Vehicles and equipment accessing and egressing the project site ■ Disturbance of hazardous building materials during demolition activities (*e.g.,* asbestos, lead, *etc.*) ■ Potential to encounter impacted soils/groundwater (from past or existing land use) ***Operation*** ■ Use of hazardous materials and generation of solid and hazardous wastes including Regulated Medical Waste ("RMW") ■ The proposed action is located within 1500 feet of three licensed day care centers (*i.e.*, sensitive receptors) ■ The project or adjacent area includes a site(s) with a completed emergency spill remediation, or a completed environmental site remediation ■ The proposed action will result in an increase in the rate of disposal, or processing, of solid waste ■ A CSX railroad is located ±900 feet north of the proposed project area[9] ■ The proposed action will include the use of pesticides or herbicides	***Existing Information Sources*** ■ Desktop environmental database review ■ Oneida County Comprehensive Emergency Management Plan available at: http://www.ocgov.net/oneida/sites/default/files/E911/CEMP/Final%20CEMP.pdf ■ CSX ■ Limited Phase I ESA ***Additional Information Needs*** ■ Maintenance and Protection of Traffic Plan ■ Geotechnical investigation (including an assessment of potential surface and subsurface impacts associated with past land use) ■ Waste management practices	***Construction*** ■ Preparation and implementation of a CHASP to protect construction workers and the community from exposure to potential impacted materials ■ Contractors will be required to perform hazardous building material surveys of proposed demolition properties ■ Disposal of regulated materials/wastes in accordance with local, State and federal requirements ***Operation*** ■ Operation of the IHC will require the use of chemicals and other potentially hazardous materials and generation of hazardous wastes. These materials and wastes will be stored, handled and managed in accordance with applicable local, State and federal requirements ■ Use of herbicides and pesticides will be in accordance with applicable local, State and federal requirements ■ Coordination with the State Emergency Response Commission (*i.e.,* Homeland Security and Emergency Services) and Local Emergency Planning Committee(s) ("LEPC") ■ Implementation of existing emergency response plans

[9] Reasonably foreseeable catastrophic impacts (even if the probability of such an occurrence is small) must be acknowledged and identified in the DEIS. The discussion will include descriptions of areas, populations or resources potentially affected; a general discussion of the likelihood that the catastrophic impacts would occur; and a

discussion of alternatives and mitigation measures intended to prevent such catastrophic impacts, including measures which have been incorporated into the proposed project design. The Oneida County Office of Emergency Management will be consulted during the DEIS process.

Environmental Topic	Potential Significant Adverse Impacts	Information Sources/Needs	Potential Mitigation Measures
Consistency with Community Character and Plans	***Construction*** ■ Acquisition (via voluntary negotiation and eminent domain) and demolition or alteration of properties in the proposed project area ***Operation*** ■ Land-use components will be different from current surrounding land use pattern(s); impact on City-owned and privately-owned lands within the project footprint ■ Potential to result in secondary economic development impacts[10] (*e.g.,* residential or commercial development) ■ Potential to replace or eliminate existing facilities, structures, or areas of historic importance to the community ■ Potential to displace affordable or low-income housing ■ Potential secondary impacts resulting from the relocation and/or displacement of existing businesses/services (at proposed downtown and existing FSLH and SEMC locations) ■ The proposed action may be inconsistent with the predominant architectural style and character of the area	***Existing Information Sources*** ■ Conceptual site plan ■ SHPO CRIS; http://cris.parks.ny.gov/Login.aspx?ReturnUrl=%2f ■ Zoning ordinance ■ City Master Plan. Available at: http://www.uticamasterplan.org/mp_downloads.htm ***Additional Information Needs*** ■ Historic Structure & Building Inventory Survey ■ Architectural renderings ■ Public Participation Plan ■ SHPO consultation ■ Consistency with New York State's Smart Growth policy	■ The project will require approval of a site plan by the City Planning Board, as well as City issuance of building permits based on compliance with the New York State Building Code ■ Adherence to conditions identified in the SHPO-approved Programmatic Agreement ■ Consideration to zoning amendments to regulate buildings/objects around the heliport site

[10] The DEIS will address the potential, non-speculative, decrease or increase in tax revenue resulting from the project only as it relates to the City's ability to continue to provide socio-economic services and infrastructure support. Disposition of City-owned land, as it relates to the project, will also be identified. Potential effects that a

Environmental Topic	Potential Significant Adverse Impacts	Information Sources/Needs	Potential Mitigation Measures
Impacts on Solid Waste Management	***Construction*** ▪ Temporary increase in the rate of disposal or processing of solid waste from construction/demolition activities ▪ The need to manage impacted soils/groundwater and/or hazardous building materials ***Operation*** ▪ Waste generation, handling, transportation, and disposal (solid waste, hazardous waste and RMW	***Existing Information Sources*** ▪ 2010 Oneida-Herkimer Solid Waste Management Plan ***Additional Information Needs*** ▪ Project-related solid waste generation estimates ▪ Management methods and locations	***Construction*** ▪ Evaluation of material selection for interior and exterior building materials for recycled content and local materials ▪ Diversion of construction and land clearing debris from landfill disposal (if applicable) ▪ Redirecting recyclable-recovered resources (including demolition materials) back to the manufacturing process ▪ Redirecting reusable materials to beneficial applications ***Operation*** ▪ Solid waste and recyclables will be managed in accordance with applicable local, State and federal requirements ▪ Consistency with the County's Solid Waste Management Plan ▪ RMW will be hauled by a NYSDEC-permitted RMW transporter from the new hospital to the existing state-permitted autoclave and shredder located on the St. Luke's campus prior to ultimate management off-site in accordance with applicable local, State and federal requirements

proposed project may have in drawing customers and profits away from established enterprises, possible reduction of property values in a community, or potential economic disadvantage caused by competition or speculative economic loss, are not environmental factors and will not be addressed in the DEIS.

Environmental Topic	Potential Significant Adverse Impacts	Information Sources/Needs	Potential Mitigation Measures
Environmental Justice	■ Potential displacement of affordable or low-income housing in NYSDEC-designated "Potential Environmental Justice Area"	***Existing Information Sources*** ■ NYSDEC-designated Potential Environmental Justice Areas in the City of Utica. Available at: http://www.dec.ny.gov/docs/permits_ej_operations_pdf/oneidaej.pdf ***Additional Information Needs*** ■ Public Participation Plan	■ Implementation of the Public Participation Plan

1.5 CUMULATIVE IMPACTS

The DEIS will summarize the potential cumulative impacts of the proposed project in conjunction with other proposed and existing projects in the area. As defined in the NYSDEC's SEQRA Handbook, cumulative impacts occur when multiple actions affect the same resource(s). These are impacts on the environment that result from the "incremental or increased impact of an action(s) when the impacts of that action are added to other past, present and reasonably foreseeable future actions. Cumulative impacts can result from a single action or a number of individually minor but collectively significant actions taking place over a period of time." (http://www.dec.ny.gov/docs/permits_ej_operations_pdf/seqrhandbook.pdf)

Cumulative impacts must be assessed when actions are proposed, or can be foreseen as likely, to take place simultaneously or sequentially in a way that the combined impacts may be significant. As with direct impacts, assessment of cumulative impacts should be limited to consideration of reasonably foreseeable impacts, not speculative ones. Based on an initial consultation with the City's Department of Urban & Economic Development, the following projects were identified as potentially occurring within or proximal to the project area and within a similar timeframe as the proposed IHC project:

- Expansion of the Utica Memorial Auditorium, including the proposed NEXUS Center ("NEXUS"). NEXUS will be an approximately 170,000 sf tournament-based recreation play facility, utilized for ice hockey, box lacrosse, soccer, and other field sports that can be performed on a 200 x 85-foot playing surface. NEXUS will include three playing surfaces, 25± locker rooms, commercial office space, college classroom space, retail space, food and beverage services, and other multi-purpose training space. NEXUS is proposed to be developed on the block immediately east of the existing Auditorium, and will include the removal of Charles Street, an existing City street
- NYSDOT Route 5S (Oriskany Street) safety improvement project. Construction on this 2-year project began in April 2018, and will include reconstruction, re-aligning, and re-configuring intersections along Oriskany Street between Broadway and Broad Street
- City of Utica Combined Sewer Overflow ("CSO") Control Project A9.2. Construction on this 6-month project will begin in May 2018, and will include construction of a large-diameter storm sewer from John Street to Broad Street, the rehabilitation and re-purposing of the existing Old Erie Canal Conduit between Seneca Street and John Street, and other incidental storm and sanitary sewer modifications within the project limits. The project will convey previously separated stormwater flows to a dedicated stormwater discharge point at Broad Street (Ballou Creek)

Cumulative impacts on the following resources will be evaluated:

- Traffic
- Utility infrastructure.

The evaluation will rely on existing, readily available information including environmental impact assessments prepared by others for those projects (if available). In addition, potential cumulative traffic impacts will be incorporated into the IHC project's traffic impact study.

1.6 UNAVOIDABLE ADVERSE ENVIRONMENTAL IMPACTS

The DEIS will summarize unavoidable adverse environmental impacts; these are impacts that cannot be avoided or fully mitigated. Both short- and long-term impacts will be identified.

1.7 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The DEIS will summarize the natural and human resources that will be consumed, converted, or made unavailable for future use by the proposed project.

Construction

- Commitment of previously developed land
- Commitment of resources (*e.g.*, building materials)

Operation

- Commitment of infrastructure (*e.g.,* water, sewer, police/fire protection, electricity, natural gas, transportation network, solid waste management)
- Commitment of workforce

1.8 GROWTH INDUCING ASPECTS

While growth-inducing effects (economic and social) of the IHC project may be beneficial to the region, induced growth may also be the prime source or cause of secondary environmental impacts. The growth inducement section of the DEIS will describe any further development, which the proposed action may support or encourage, such as:

- Attracting significant increases in local population by creating or relocating employment
- Providing support facilities or services
- Increasing the development potential of the surrounding area

The growth inducement section of the DEIS will rely on growth projections/predictions, which are based on available information. The purpose of the discussion of growth inducement in the DEIS is to enable Involved Agencies to reach findings concerning both positive and negative effects of induced growth in the area of the proposed project.

Growth inducting impacts will also address the future use/re-use of the existing facilities. MVHS is conducting an evaluation of the potential adaptive reuse of its existing facilities, which will form the basis of evaluation in the DEIS.

1.9 REASONABLE ALTERNATIVES

To support the goal of delivering higher quality, more effective care with better community outcomes and at a lower cost, MVHS made the decision to consolidate the St. Luke's and SEMC campuses to a single facility. This decision was spurred by several key objectives:

- The desire and need to build a facility with the newest technology, services and advancements in patient safety and quality so that our community can receive the most up-to-date healthcare services that rivals those found in large cities
- The growing demand for healthcare due to the rapidly increasing and aging population in this region
- The increasing need to improve accessibility and availability by attracting specialists and providing services that otherwise would not be available to our community

In addition, funding for the project has been provided, in part, by New York State via the Oneida County Health Care Facility Transformation Program, which provided capital funding ($300 million) "in support of projects located in the largest population center in Oneida County that consolidate multiple licensed health care facilities into an integrated system of care." (https://www.nysenate.gov/legislation/laws/PBH/2825-B)

Considering these objectives and the capabilities of MVHS, a description and evaluation of reasonable project alternatives will be included in the DEIS. In addition to the required "no action" alternative, the DEIS will discuss:

- Alternative sites[11]
  - Downtown Utica Site (proposed Project Site)
  - Former NYS Psychiatric Center ("Old Main") – 1213 Court Street, Utica, NY
  - St. Luke's Hospital Campus – 1656 Champlin Avenue, New Hartford, NY
  - New Hartford Shopping Center[12] – 120 Genesee Street, New Hartford, NY
  - Rehabilitation/renovation of the existing St. Luke's and SEMC facilities
- Alternative scale/magnitude
- Alternative design
- Alternative timing

Under the "no action" alternative, MVHS would not relocate and consolidate the St. Luke's and SEMC campuses to the proposed downtown MVHS IHC location.

1.10 ELEMENTS OF THE DEIS

Draft Table of Contents for Draft Environmental Impact Statement
Mohawk Valley Health System ("MVHS")
Integrated Health Campus ("IHC")
Utica, New York
[Notice of Completion Date]

Cover Sheet (including items listed in 6 NYCRR 617.9(b)(3))

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1.1.4.1 Facilities

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[11] The evaluation of alternatives will rely, in part, on "Draft Hospital Site Selection Process Summary Memo" provided by Mohawk Valley EDGE for MVHS (prepared by Elan Planning and O'Brien & Gere, June 2015).
[12] Correspondence from New Hartford Shopping Center Trust to City of Utica Planning Board (received February 20, 2018).

1.1.5 Construction Activities

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Chapter 3: Environmental Setting, Impacts, and Mitigation

3.#. – *Applicable Environmental Topic (The following environmental topics will be included in the Draft EIS: Land, Surface Water, Groundwater, Air, Aesthetic Resources (including Light), Historic & Archaeological Resources, Transportation, Energy, Noise & Odor, Human Health, Community Character and Plans and Solid Waste Management). For each topic, the following narrative will be provided:*

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Chapter 4: Effects on the Use and Conservation of Energy

Chapter 5: Cumulative Impacts

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Chapter 7: Irreversible and Irretrievable Commitment of Resources

Chapter 8: Growth Inducing Aspects

References

References cited in the document will be identified by title, source and date.

Appendices

- SEQRA Documents (Lead Agency Coordination Materials, Full Environmental Assessment Form, Positive Declaration, Scoping Documents)
- SHPO Consultation Materials
  - Phase IA Cultural Resource Investigation
  - Historic Structure & Building Inventory Survey

- SHPO Correspondence

- Traffic Impact Study & Parking Analysis
- Subsurface Evaluations (Report & Data)
- Adaptive Reuse Report (Existing MVHS Facilities)

1.11 IRRELEVANT OR NON-SIGNIFICANT ISSUES OR IMPACTS

In accordance with SEQRA implementing regulations (6 NYCRR 617.8(f)(7)), the following issues were determined not to be relevant or environmentally significant to the SEQRA process for this project (see EAF Part 2 – Identification of Potential Project Impacts):

- Impacts to Geological Features (*e.g.*, cliffs, dunes, minerals, fossils, caves)
- Impacts on Plants and Animals
- Impacts on Agricultural Resources
- Impacts on Open Space and Recreation
- Impact on Critical Environmental Areas (http://www.dec.ny.gov/permits/6184.html)

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CITY OF UTICA PLANNING BOARD

PUBLIC HEARING

regarding

MOHAWK VALLEY HEALTH SYSTEM ("MVHS")

INTEGRATED HEALTH CAMPUS ("IHC")

STATE ENVIRONMENTAL QUALITY REVIEW ACT ("SEQRA")

DRAFT SCOPING DOCUMENT

for

DRAFT ENVIRONMENTAL IMPACT STATEMENT

* * * * * * * * * * * * * * * * * * * *

HELD: Thursday, June 7, 2018
5:30 p.m.
New York State Office Building
Conference Rooms A & B
207 Genesee Street
Utica, New York

Present: CITY OF UTICA PLANNING BOARD
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Joseph Caruso, Member
Anthony Colon, Member

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Shorthand Reporter and Notary Public

P R O C E E D I N G S

MR. MATRULLI: Good evening everybody. We're ready to proceed. Can I have a motion to open the Hearing?

MR. CARUSO: I move that we open.

MR. COLON: Second.

MR. MATRULLI: The meeting is open. At this time, I would like to present Kathleen Bennett from the Bond, Schoeneck & King firm, who's going to talk about the project and our scoping documents. Kathleen?

MS. BENNETT: Hi. Good evening everybody. I am an attorney with Bond, Schoeneck & King, and we represent Mohawk Valley Health System in connection with the construction of an Integrated Health Campus in downtown Utica.

On May 7th, the City Planning Board issued a positive declaration pursuant to the New York State Environmental Quality Review Act, which I'm going to refer to as SEQRA -- and for purposes of the stenographer, that's S-E-Q-R-A -- and identified several potential significant impacts that require further study in a draft

environmental impact statement, which I may refer to from time to time as an EIS.

In accordance with SEQRA, the draft EIS must address specific adverse environmental impacts, which can be reasonably anticipated. In connection with this process, the Planning Board has opted to engage in what's called the scoping process in order to solicit public input on the contents of the DEIS, focus the draft EIS on potentially significant adverse impacts, and eliminate consideration of those impacts that are irrelevant or non-significant.

With that in mind, we thought it would be useful to provide a brief overview of the project and the draft scoping document that has been available on the City's website.

So at this time, I'm going to ask Mike Solak, the regional vice-president of Hammes Companies, the project manager, to provide a brief overview of the project.

MR. SOLAK: Good evening. My name is Mike Solak. I work for the Hammes Company, which is a healthcare development firm. We've been contracted by Mohawk Valley to help manage the

project going forward.

A brief description of the project is what is contemplated as a 673,000 square foot acute care hospital, multi-story, containing services such as operating rooms, emergency department, labor and delivery, behavioral health, inpatient beds. The bed count is approximately 373 beds. And it is contemplated to be having cardiac services, which some of the beds will be of a CCU/ICU configuration. And there will be some multiple buildings associated with the campus eventually, including a parking garage, but currently this project is contemplating the hospital structure. Thank you.

MR. MATRULLI: If anyone hasn't signed up on the sign-up sheet that wishes to speak, you need to do that now. Does anybody fall in that category?

(Attendees indicated in the Negative.)

MS. BENNETT: So just briefly on the scoping process and the scoping document.

So SEQRA establishes a process to systematically consider environmental factors early in the planning stages of actions that

require funding or approvals from local, regional or state agencies. Prior to issuing any discretionary decision, agencies must balance environmental impacts with social and economic factors.

The Environmental Impact Statement that's required for this project will explore ways to avoid or minimize some or all of the potential adverse environmental impacts in order to balance those impacts with social and economic factors. In order to do that, the draft EIS will identify the significant environmental conditions and resources that may be affected by the project, assess relevant environmental impacts of the project on those environmental conditions and resources, and eliminate or de-emphasize irrelevant or insignificant impacts or issues.

The scoping process will better frame the contents of the draft Environmental Impact Statement by focusing the EIS on the most relevant issues and potential impacts, including means to avoid or minimize those impacts and ensure that the draft EIS will be a concise, accurate and complete document adequate for public review.

Scoping also allows an opportunity for public input and results in a review with broader perspective.

So to give you a 30,000 foot overview of the Draft Scoping Document, that document includes potentially significant adverse environmental impacts, including both short-term construction-related activities and long-term impacts associated with the operation of the proposed project. The potential impacts in that document are identified by topic and includes the extent and quality of information needed to adequately address each impact, such as existing information, required new information, and methodologies for obtaining that new information, as well as an initial identification of mitigation measures to avoid or minimize potential adverse environmental impacts.

So for example, the scoping document has identified the following potential impacts:

Potential impact to land and surface water during construction activities and includes potential mitigation to include preparation of a storm water pollution prevention plan and

management of any impacted soils or subsoils in accordance with state and federal requirements.

It identifies potential impacts to groundwater during construction and operation in connection with historic spills from above or underground tanks and in connection with the bulk storage of fuel oil, and potential mitigation to include preparation of a storm water pollution prevention plan, a construction health and safety plan, removal of any historic contamination in accordance with state and federal requirements, and compliance with state and federal regulations for installation of any new tanks.

A potential impact to air from dust during construction and from emissions during combustion and process sources during operation to be mitigated by best management practices during construction and obtaining a state air facility registration from DEC for the operation of the hospital.

Potential impacts from lighting to be mitigated by adherence to building code requirements and use of lighting fixtures that reduce glare and spillover.

Potential impacts to historic and archeological resources to be mitigated by entering into and adhering to the terms of a programmatic agreement with the State Historic Preservation Office.

Potential impacts on transportation, which will require preparation of a traffic impact study and consultation with the New York State Department of Transportation and the City of Utica to develop appropriate mitigation with respect to road and/or signal improvements.

Potential impacts on utilities as a result of improvements and modifications needed to the existing utility infrastructure.

Potential impacts on energy during operation to be mitigated by implementation of energy-saving measures.

Potential impacts on noise during construction and operation to be mitigated by compliance with city code requirements.

Potential impacts on human health to include disturbance of hazardous building materials and contaminated soils and groundwater during demolition and excavation to be mitigated by

implementation of a construction safety plan and complying with state requirements for demolition and disposal.

The use of hazardous materials and generation of regulated medical waste to be mitigated by handling, storing and disposing in accordance with state and federal requirements.

The proximity of the hospital to daycare centers and the proximity of the hospital to the CSX rail line to be mitigated by coordinating with emergency response commissions and implementation of emergency response plans.

Potential impacts on community character from land acquisition, secondary economic development, development different from surrounding land use patterns/architecture/character to be mitigated by compliance with building code and the programmatic agreement with the State Historical Preservation Office.

Potential impacts on solid waste management to be mitigated by compliance with local and state disposal plans and regulations.

And the potential impact on environmental justice to be addressed by implementation of the

public participation plan.

So the draft EIS will also consider the potential for cumulative impacts in conjunction with other proposed and existing projects, especially with regard to traffic and utility infrastructure, growth-inducing aspects of the project by relocating existing businesses and by increasing development potential of the surrounding area, and reasonable alternatives, including in addition to the downtown Utica site, the former New York State Psychiatric Center, the St. Luke's Hospital Campus, and the New Hartford Shopping Center.

So just by way of understanding what comes next with regard to the process, all of the comments received tonight or in writing up to June 20th will be reviewed by the Planning Board and the Applicant. The Planning Board, as the lead agency, is ultimately responsible for determining which issues and concerns are actually relevant, substantive potential impacts which should be included in the final written scoping document. The final scope that will be adopted by the Planning Board will become the standard by

which the applicant, the lead agency and any other involved or interested entities should use in determining the adequacy of a submitted Environmental Impact Statement.

Once the EIS is determined to be complete, there will be another round of public comment on that document, followed by preparation of a final Environmental Impact Statement, and the adoption of a findings statement by the lead agency and then by all involved agencies prior to any approvals that those agencies have to issue with respect to the project.

So we thank you for your time and we look forward to your comments.

MR. MATRULLI: Can I have a motion to open the Public Hearing?

MR. CARUSO: So moved.

MR. COLON: Second.

MR. MATRULLI: The Hearing is open. Thank you for coming.

The purpose of this Hearing is to identify potentially significant adverse impacts related to the proposed actions that are to be addressed in the draft environmental impact statement,

including the content and level of detail of the analysis, the range of alternatives, the mitigation measures needed, and the identification of non-relevant issues. Scoping provides us with guidance on matters that must be considered in the environmental impact statement and provides an opportunity for early participation by involved agencies and the public in review of the proposal.

A draft scoping document was prepared by the applicant and was made available to involved and interested agencies, as well as to the public via the City's project website.

As SEQRA leading agency, the Planning Board scheduled a public scoping meeting to solicit public input relevant to the matters to be addressed in the environmental impact statement, which will be prepared over the next couple of months.

As lead agency, the Planning Board is interested in receiving your input on the following: An identification of those aspects of the environmental setting that may be impacted by the proposed project; the extent and quality of information needed to adequately address each

impact; mitigation measures to avoid and minimize adverse environmental impact; the range of reasonable alternatives to be considered.

A final scoping document will be prepared that will account for the relevant substantive comments we receive tonight, and through the public meeting period, which ends on June 20th. The final scoping document will provide a road map that will guide the preparation of the environmental impact statement.

I would like to state the following meeting ground rules. This is your time to provide input. We will not be responding to questions or comments tonight. Feedback will be used to guide the content of the environmental impact statement. Respect the stated purpose of the meeting. Respect each other. Listen actively to others. Be patient when listening to others speak and do not interrupt them. Limit side conversations. Please silence cellphones. If you choose to make a comment, we will allow each individual three minutes to speak, per our normal Planning Board protocol. Chris Lawrence will be our timekeeper and will notify the speaker when the three minutes

is complete. Be respectful of the time allotted for verbal comments. Additional thoughts can be shared via the comment cards provided.

Speakers will be called in order per the sign-up sheet. Once your name is called, please make your way to the microphone to provide your comments. Note that you may only sign up once for your own opportunity to speak. Speaking time may not be transferred to anyone else.

We have a stenographer present to capture verbal comments. Please clearly state your name and address before you begin your comments. The stenographer may ask you to repeat or spell your name or street address.

If you have additional comments you would like to submit and you do not feel comfortable speaking in front of the group, you may submit a written comment via the comment cards available. Mail comments to City of Utica Planning Board, One Kennedy Plaza, Utica, New York 13502. E-mail comments to bthomas@cityofutica.com. For more information, visit the cityofutica.com or cityofutica.com/department/urban-economic-development/planning/mvhc-seqra/index. Got that?

All comments are due by close of business on June 20th.

Okay. We shall begin. And I hope I don't destroy too many names as I go through here. Mark Laramie of Judd Road, Oriskany.

MR. LARAMIE: Good evening. My name is Mark Laramie. My address is 5999 Judd Road, Oriskany, New York. I'm here to support the Mohawk Valley Health System Integrated Health Campus project.

I work for the Oneida County Department of Public Works, and for the past twenty-five years, I have been directly involved with many municipal and public development projects in the historic Bagg Square district within the City of Utica, New York. I have witnessed firsthand the positive impact public improvement investment projects have had on the economic development, historic preservation, and revitalization of the district.

As a result of public investment, future prospects for the historic Bagg Square district are better now than any time in the memorable past. The Mohawk Valley Health System Integrated Health Campus Project will have a similar, but

exponentially larger halo effect on economic development, historic preservation, and revitalization, and these benefits will persist for many generations to come. It is my opinion that these benefits must be carefully weighed when considering any adverse impacts that this project may present in the community. Thank you very much.

MR. MATRULLI: Thank you. Next is Millie Candor [phonetic] -- Millie, I'm sorry, but I can't read your writing.

MS. CANDOR: No.

MR. MATRULLI: No? Dave Mathis.

MR. MATHIS: Thank you. My name is David Mathis, M-A-T-H-I-S. I live at 833 Symonds Place, that's S-Y-M-O-N-D-S Place, Utica.

I'm here also to voice support for the new hospital in downtown Utica. I have been a resident of the City of Utica for seventy years. I have worked downtown in Utica for forty-four years. From 1974 to 1980, I worked in 360 Columbia street. That's the old Burger Department Store building. And for the six years I worked there, it was a horrible building then

and it's a horrible building now. I can tell you that without a doubt, as I travel through the city -- I worked downtown for forty-four years, and my way home is to go down Lafayette Street, Bleecker Street. And as I travel through that area, it's very clear to me that we need to have something done there. And to have the environmental scope done and to look at that location for development, it's clear we need to have it. You know.

I go back far enough to remember when many of us at the time wanted to see development in the City of Utica, and one of the projects that we supported was to maybe put SUNY-Poly, which is now in Marcy. We wanted it downtown Utica, because we believed it would bring economic development, jobs and a lot of growth. We didn't do that. Utica lost out. Now I'm hearing the same thing again, that if we build the hospital somewhere else, Utica will lose out.

I'm about supporting strongly that we need to have development within the City of Utica. This project will do it. I think if you drive down there or if you walk down there where this project is proposed, take a look at it. And when somebody

tells me that these buildings need to be preserved, I just don't see it. And I think it's about time that those of us who are strongly supportive of development within the City of Utica, that we take a stand. My stand is build the hospital. Thank you.

MR. MATRULLI: Karen Jones.

MS. JONES: Good afternoon. Karen Jones. I'm the director of the Department of Social Services, 800 Park Ave, Utica. I want to thank you for the opportunity to speak here today.

The Department of Social Services is one of the largest county departments. We have eleven divisions that encompass more than twenty-five distinct program areas. The services provided are diverse in what we're able to provide, running the gambit from benefit-related programs, temporary assistance, SNAP, Medicaid, to services-related programs such as child welfare, adult and child protection, employment and daycare, foster care and adoptions. While these services are quite diverse, they share a common theme of primarily working with people who struggle with issues related to poverty.

Poverty brings with it a myriad of other problems, indirectly related to the issue of not having enough resources to meet one's basic needs, issues like the lack of access to secure and adequate housing, transportation, child care, safe and environmentally-friendly neighborhoods, medical care, and quality education and job skills, all of which are critical to a person's ability to escape impoverishment.

The mission of the Oneida County Department of Social Services is to provide for financial and social services to eligible residents of Oneida County and to ensure these services are provided in a manner that reflects respect for each individual and enhances family and individual functioning and well-being, reducing dependency and maintaining children and adults in a safe community as a first priority.

When I reflect on this statement, it's evident to me that to be successful in meeting our objections -- our objectives, it is essential that there be recognition that a person's well-being and independence must be viewed in the context of the community as a whole and the opportunities

that exist within the environment in which our individuals live, work and play. I think it is often these types of connections that are missed between the community and social services, because DSS is often perceived by the general public as the answer to the problem of poverty versus one that is a component of a many-sided solution to the complex issue.

The availability of quality healthcare, and the revitalization of the area of an urban center and creation of job opportunities are all tremendously available to people seeking assistance from our department. Poverty has been clearly linked to many adverse health conditions, social problems, and therefore, impoverishment impacts our entire community, regardless of one's own social and economic standing. A lack of fiscal or social resources creates situations where a person is unable to mitigate the normal problems each of us encounters everyday. Having adequate resources provides a buffer to manage difficult situations, whether it be addiction, relationship problems, poor health, high stress, or a vast array of human challenges that are in

existence in every society and every social class. One strategy to remedy this is to ensure recipients have access to high-quality and readily available healthcare. Another strategy is to create opportunities --

MR. LAWRENCE: Ma'am, your time is up.

MS. JONES: Okay. Thank you. I apologize. Thank you.

MR. MATRULLI: Thank you.

MS. BENNETT: You can remind speakers that they can submit written, too.

MR. MATRULLI: You can submit that in writing. Anybody can submit anything they've printed up, the whole package. We'd be more than happy to receive it. Frank --

MR. LAWRENCE: I want this to go as smooth as possible. I don't want to cut anybody off, but it might help that I just raise my hand at ten seconds just to give you a warning.

MR. MATRULLI: Frank Przybycien.

MR. PRZYBYCIEN: My name is Frank Przybycien, 10 Irving Place, Utica, New York.

COURT REPORTER: Can you spell your last

name, sir?

MR. MATRULLI: Spell that.

MR. PRZYBYCIEN: P-R-Z-Y-B-Y-C-I-E-N. I'm representing myself. I'm a professional engineer, and I'm also representing, tonight, the Genesis Group.

The Genesis Group feels very strongly for the approval of this project and endorsing it at a downtown location. We think that the location is the best in the entire region. It's got road development - north, south, east, west - and it's the cornerstone of that. It also is less than five minutes away from the thruway exit.

The first thought that we have is that the project, although we're looking at it as a project for today, once the medical center is open, it is going to be in use between sixty and eighty years. And we've got to think of it as, what is medicine going to be like in eighty years? What is transportation going to be like in eighty years? This building will still be in use. So we're looking at it from the long range, not just the first year it's open.

The first thing we do think of is it has an

amazing conductivity to other great projects that are underway in downtown Utica, the "U" District, historic Bagg Square, hotels, and also Varrick Street and multi-purpose housing and so many other proposals that are yet to be named. We think that this location -- and I don't think of it as a hospital. I think it should be thought of as a medical center campus, that there will be additional buildings and additional towers and additional services that we don't even dream of today will be underway in this location.

The support services for this location are just outstanding. We also think that we should use renewable energy where it is possible, particularly geothermal, if not in Phase 1 of this project, but in further phases. We'd like to think that this medical center will have R&D resources, and that Utica will become known as a research center and additional jobs in the medical industry.

The final thought is this project gives unique opportunities for other uses of the three hospitals that are presently being used.

MR. MATRULLI: Thank you.

UNIDENTIFIED SPEAKER: Different people are being asked different questions, like their name and so forth. Can you start the timer after people specify their name and they're asked to spell it, so on and so forth, so the clerical work is not counted in their time? Is that possible?

MR. LAWRENCE: Yes.

MR. MATRULLI: Michael Galime.

MR. GALIME: My name's Michael Galime, spelled G-A-L-I-M-E. Rather than come before the Planning Board this evening and discuss whether there's support or a lack of support for this project, I'd like to address the process.

Over two years ago, this project began with a proposal. It was very public. It was discussed. A location was selected publicly. This process should have begun with MVHS and the business owners, the property owners. That's how that process should have begun.

And then the second step, which was Phase 2 of this project, should have been the filing of this project and the Planning Board. As we know, after almost three years, February 2nd of this year is when this project actually officially

started.

I feel that the Utica Planning Board should have been afforded the ability to weigh in on the impacts of a potential hospital downtown prior to two years of public debate, promotion and demotion of this project.

Essentially what I'm asking today is that this assessment be pragmatic and priority-based, and I'd just like to list some of those priorities from the perspective of Utica.

The tax base, how it's affected. The City of Utica has essentially provided its services to the residents of this City, and the tax base and the ability for it to garner revenue is very important.

The private property and business owners, not only in the primary subject of how to deal with the fact that there are business owners that may be displaced if this hospital is built, but also the secondary effects if people are relocated. There has been proposals through the LDCs that they'll be given pilots and other tax breaks. So there's not only primary issues here, there's also secondary and tertiary.

The city facilities and property. There are much costs involved in not only gifting properties to this project, but also the relocation of facilities, such as the police department and other facilities in the near future, and they are related to this project and should be considered as part of this cost.

Our form-based code. We do have a form-based code. If this proposal does move forward, I would strongly urge that the Planning Board be allowed to consider that form-based code and that those impacts be weighed on the actual design of the hospital.

The St. Luke's campus and the St. Elizabeth's campus, not only will this affect other parts of the City of Utica, but this will also affect other parts of the City of New Hartford -- or Town of New Hartford. Those may have positive and negative effects.

Overall, what are we building and why? The legislation states very specific things, and it's for the delivery of good healthcare --

MR. LAWRENCE: Time's up.

MR. GALIME: -- whether this building will

provide this or not.

MR. MATRULLI: Michael, can you also provide us with your address?

MR. GALIME: Yes, 2617 Crestway, 13501. It's Utica. Thank you.

MR. MATRULLI: Michael Romano.

MR. ROMANO: Michael Romano, 120 Airline Street, Oriskany.

I'd like to thank you for the opportunity to speak about the proposed downtown hospital project. On behalf of the needs of our region's older residents and those with special needs, I'm Michael Romano, director of the Oneida County Office for the Aging and Continuing Care.

And I would like to commend the leaders of the Mohawk Valley Health Systems, who have had the vision and foresight to create and design the intent to consolidate existing resources, while eliminating duplication, with the goal of expanding the breadth and scope of medical services.

I believe the system designed to incorporate the latest technology to improve access and availability, along with a plan to attract

specialists, is of the upmost importance to better serve our communities and increasing older population, those known to be at greatest risk for acquiring multiple chronic conditions and acute illness requiring and deserving the most skilled medical care available. Since we know our area already has a high percentage of older persons, as cited by our county demographics, which includes close to 52,000 persons over the age of 60 county-wide, of which include 48,000 living in the cities of Utica and Rome. Demographic projections indicate this population will increase significantly by 2050. And if you consider this idea from a regional perspective, the older population, age 60 and older, are projected to increase by nearly 30,000 by 2040. And again, this is a population that is projected to be the higher utilizers of both acute and primary care and -- of our five-county region.

And while planning to accommodate for elders and the need for emergency department care, acute care, and discharges into rehabilitation and community care, I urge the planners to not only consider the demographic projections, but to also

consider the national hospitalization rates of older persons. National data indicates that while hospitalization rates of those 85 and older are significantly higher than those age 65 to 85, they're generally up to five times higher than those under the age of 65. Also statewide demographics also project that age 85 and older will increase by twenty-five percent from two-thousand to twenty-five [sic].

So because of this trend, I also ask that you approach this with increased focus on the needs of our older consumers. So thank you very much.

MR. MATRULLI: Thank you. Karen Corrigan-Ryder.

MS. CORRIGAN-RYDER: Good evening. My name is Karen Corrigan-Ryder. I'm here on behalf of Claris, LLC, which owns the property at 333 Lafayette Street, the Burger Department Store, which by the way is alive and moving, and Wilcor International, which has an annual product show and displays at 333 Lafayette Street. Does that take care of the address and the name? Okay.

Our property and a substantial portion of our business is in the footprint, and where our

employees and ourselves will be displaced with this move. The draft scope by MVHS is a starting point, but it's a mere skeleton of what a proper scope for a project of this scale and magnitude should be.

We understand that the SEQRA process involves some give and take. From this first draft scope, it's clear that MVHS expects to take, and expects the community to give. This is their first offer, and we urge the Board to come back with a more reasonable and realistic scope for an EIS that will more fully achieve SEQRA's objective of elevating environmental considerations to equal footing with social and economic considerations.

Since this is a blueprint for the entire environmental review, it's imperative that we get this right at the outset and we embark on this process together, that both the community and MVHS receives proper, even time to discuss the process. It will be the Board's determination whether the final scope is adequate, so please give this document and your efforts your most careful consideration. We will submit this in writing.

How an applicant will finance a particular

project is not typically relevant to a project's purpose and need; therefore, we ask that the state grant not to be referenced or discussed under the section on purpose and need, as those two parameters need to be independently and clearly established in this record. Spending money for the sake of spending money is not a legitimate purpose.

SEQRA's broad definition of "environmental" includes existing patterns of population, concentration, distribution or growth and existing community or neighborhood character. This project would affect multiple communities and neighborhoods in Oneida County, not just downtown. We don't believe the draft scope properly addresses these existing patterns and character, or the significant impacts the project will have on our existing patterns of growth and development in our neighborhoods.

We urge the Board to take the necessary hard look and analyze how the project will affect the neighborhood and community where the project is proposed, including people and business such as ours, which would be displaced, as well as those

around the existing facilities, including the Associated Medical Service businesses who have made significant investments around the current existing facilities. Please make sure that they're subject to analysis and a robust discussion whether DEIS -- and please make sure, very sure, that adequate mitigation is imposed for all these impacts.

I believe that somebody will be finishing my comment when they come up, and I thank you very much.

MR. MATRULLI: Thank you. Patrice Bogan.

MS. BOGAN: Hi. My name is Patrice Bogan, and I'm a City of Utica resident at 320 Hartford Place --

COURT REPORTER: Can you spell your last name, please?

MS. BOGAN: B-O-G-A-N. And I'm the deputy director of the Oneida County Health Department.

With this new hospital location comes the opportunity for new and strengthened relationships with the urban community. The required public health and hospital community health assessment identifies the City of Utica with higher than

average numbers of obesity, chronic disease, childhood lead poisoning and addiction, to name a few. Therefore, the downtown location is desired, due to the opportunity for this new hospital to enhance health promotion strategies within the City of Utica communities, where it will live and where it will serve, and that, in turn, will benefit Oneida County as a whole.

Many factors that contribute to health are outside of the healthcare system. The social determinates of health are healthy aging. Progress in addressing racial and ethnic disparities, and socioeconomic status all influence health. The New York State prevention agenda recognizes the critical role of healthcare providers and health improvement, with emphasis on actions that the community, at an environmental level to achieve prevention agenda objectives, with a goal of improved health status of New Yorkers.

Within the healthcare setting, strategies that increase access to care and foster more meaningful engagement with those getting care will support the goal of improved health and reduction

of disparities through increased emphasis on prevention. This development will provide growth and improvement of a healthcare system for a rapidly aging population. The downtown location will provide an easily accessible site for people in need. The combined services from existing locations to this central point will also increase operational efficiencies, decreasing the rate of healthcare spending. Thank you.

MR. MATRULLI: Thank you. Dan Gilmore.

MR. GILMORE: My name is Daniel Gilmore, G-I-L-M-O-R-E. I'm with the Oneida County Health Department. I'm the environmental health director, 185 Genesee Street, Utica, New York.

I'm here to support the new MVHS hospital. I have several reasons for this.

First, there are some residential and mixed use buildings that are old and dilapidated and unsafe to live in in the hospital footprint area. They will be removed, and this will be a benefit for people that are living in poor conditions.

Second, with the removal of the older buildings and to develop the new construction, it will provide opportunities for water system

infrastructure upgrades and improvements.

And third, when finished, the project will allow for pathways for walking, green space, and other recreational uses for people that work and live in this section of downtown Utica.

Thank you for your time.

MR. MATRULLI: Thank you. Steven Keblish.

MR. KEBLISH: Steve Keblish, 106 Genesee Street, K-E-B-L-I-S-H. Good evening.

So I want to mostly address the impact on land use tonight, bringing it down to two categories.

Land use by the City of Utica. The City of Utica currently possesses and employs several parcels and streets within the impacted site. These publicly-held lands serve interest in the public good, including supporting public safety operations, private and public transportation, commerce, parking, and preserving the historical character of Utica. The scoping document should call for review of these uses, including plans to mitigate the impacts to the City of Utica's police maintenance facility operations, plans to replace the police maintenance facility, the impact on

closing streets to transportation and parking, especially on local events, including the Boilmaker, Adirondack Bank Center events, and other events which rely on these streets, the historical significance of Lafayette Street, the historical significance of the street grid, especially as it relates to historical events, such as National Beer Day and the potential beer museum to be located in Utica, and the values of the properties held by the City of Utica, and the ability of the City to recoup the value of those properties, especially as measured against the purpose of acquiring those properties, i.e., the collecting and generating of property taxes.

And the second category here is the land used by private property owners. The proposed site includes many private property owners who utilize the land for private commerce, non-profit activities, worship, storage, display, services and community organizing. These lands generate benefits to the community and public in the form of property taxes, sales taxes, public space amenities, fellowship, donations, and access to food and other goods. The scoping document should

call for a review of those uses, including how the project will impact property tax collection, including the total impact to the county, the city, the school and library before and after the project, including the impacts on property taxes at alternate sites, sales taxes collected within the site, the degree to which charitable giving will be available in or near the impacted site before and after the site -- after the project, the degree to which food service -- food services and other low cost goods will be available before and after in that area, the degree to which space will be available for community organizing, worship and other social activities within that space, and the degree to which the project will displace businesses, people and other community activities. Thank you.

MR. MATRULLI: Thank you. Dennis Davis.

MR. DAVIS: Good evening. My name is Dennis Davis. I currently have worked thirty-eight years in the heavy construction business. I'm currently the commissioner of public works for the County of Oneida. My comments will be brief and in a general nature of

the construction business, and intended to be in support of this project.

Large scale infrastructure projects of this nature definitely can have significant environmental impacts. Improvements, especially storm water discharge, can be realized during these types of large projects and provide long-term benefits. I believe that the scoping document will address all of these issues, and I will provide further written documents. Thank you.

MR. MATRULLI: Thank you. Ralph Humphreys.

MR. HUMPHREYS: Yes. My name is Ralph Humphreys, H-U-M-P-H-R-E-Y-S, Tibbitts Road, New Hartford. Thank you for the opportunity to be here.

I have more questions than anything else, but listening, I was wondering. Is this about urban renewal or is it about our healthcare? That is one of my questions.

I ran a business for many years, and I was always taught to not put all your eggs in one basket and depend upon -- and I think what we've got with three hospitals under one management is

working very good. And with the things that are happening in the world, we're much better to have them divided than all in one place. And we're losing a lot of beds by doing -- doing it this way. You know.

And the main thing about a hospital is the structure of it, that it stays up, a location the people can get to, the equipment in the hospital and the management, and management is a very important thing. You know. They say we've got problems with St. Elizabeth's now. I have not heard of any engineering reports, anything that tells about what is wrong with it, what is the cost to repair it, to put it back in shape. Those things should be decided first before we go into just get rid of it and build a new one.

We will end up -- yes, our project is going to be very expensive, and I believe the best way to stop -- find out where everybody stands is a public referendum and let the voters decide. Do that and then we can advance on after that.

Thank you very much. Thank you.

MR. MATRULLI: Thank you. Fred Lampman.

MR. LAMPMAN: Hi. My name is Fred Lampman,

120 Base Road, Oriskany. I am the deputy director for Oneida County's Department of Emergency Services.

Currently our department is undertaking a multimillion dollar public safety radio communications upgrade project, and one of the challenges that we face when dealing with a project of this type is the type of construction that the proposed hospital would be for getting in-building coverage for our first responders when they're in such a facility. And it is our hope that Mohawk Valley Health Systems will work in consultation with our department to implement an in-building communication solution to provide adequate radio communication to our first responders as they move forward with their plan so that our responders can stay in contact with each other and with the 9-1-1 dispatch center. Thank you very much.

MR. MATRULLI: Thank you. Jim Brock.

MR. BROCK: Good evening. I'm Jim Brock. That's B-R-O-C-K, 1900 Genesee Street.

It's been said that a city can never be revitalized by subtraction. Bulldozing an entire

historic neighborhood is not the solution. It is, in fact, the problem.

Your job, as the lead agency on SEQRA, is to compare alternative sites, which begs the question: Where are the studies that MVHS promised would be provided to you of the other sites that they chose not to go to?

It is incumbent upon you, as the lead agency, to not only have it for your review, but to also provide it to us, the citizens of this community.

Also, with all due respect to a lot of the folks that spoke today, we're not here to discuss how happy or nice it would be to have the hospital downtown. Your job is to look at the environmental issues. And as you know, SEQRA lays them out. It is not simply air or water. It's minerals, it's flora, it's fauna, it's noise, it's resources of agriculture, it's architectural, historic, aesthetic significance. It's existing population concentration, distribution of growth, existing community or neighborhood character, and ultimately human health. When you look at those, the alternate site that was unanimously approved by the MVH Board of St. Luke's, if it was deemed

to not be feasible to come downtown, it's clearly the site it should go to. It is your job to determine whether the alternate site should, in fact, have been the correct site.

We know that by coming downtown, you will disrupt our tax base, both city, school, county, sales. You will disrupt businesses that have been in business for generations. You will literally be giving a green light to rip people's properties away from them, under one of most evil things that exist in our country called eminent domain. We may agree that on occasion, eminent domain, taking a private property for a public use, might have a reason to go forward, but in very limited situations. It should never used to be take private property and give it to a private entity. Thank you.

MR. MATRULLI: Thank you. Shawn Corrigan.

MR. CORRIGAN: Shawn Corrigan. That's Shawn, S-H-A-W-N, Corrigan, C-O-R-R-I-G-A-N, living at 1 Derbyshire Place, Utica, New York.

And this is in regards to the location at 333 Lafayette Street, owned by Claris, LLC, which is named after my grandmother, who started the

business in the early thirties, and Wilcor International is housed in that location with its international showroom.

I want to mention a few others -- SEQRA -- important things to consider. SEQRA requires that all draft environmental impact statements identify and discuss all reasonably related short-term and long-term impacts, community impacts and other associated environmental impacts. Other associated environmental impacts from the project include the secondary impacts that would result from the displacement of property owner and business within the footprint of the project. We understand economic impacts are not directly within the purview of SEQRA, but to the extent this project would substantially interfere and alter our existing patterns and population concentration distribution growth and significantly affect several existing neighborhoods and communities, the secondary impacts to displace these property owners and businesses must be thoroughly analyzed and mitigated.

The draft scope will determine the only

alternatives that will be analyzed and discussed in the DEIS. And if an alternative is not in the scope, it is not fair game. So it is extremely important that the range of reasonable alternatives in the scope be as broad and comprehensive as the project is large in scale and scope. At the very least, the final scope should include an alternative that would involve upgrading, renovating or retrofitting MVHS' existing facilities to achieve its objective of improving the delivery of patient care. Such an alternative is viable and could likely achieve significant advancements and efficiencies in patient care at a substantially less cost than the construction of a new facility.

We implore the Board to make sure the range of alternatives specified in the scope is appropriately broad and reasonable and that it omits unnecessary throw-away alternatives, such as the New Hartford Shopping Center. Please do your own independent and thorough review of the draft scope. Rely on your own professional and independent consultants instead of solely on those working for MVHS. And please err on the side of

inclusion instead of exclusion when it comes to finalizing the scope, because if something is not in the scope, it won't be in the DEIS. And any of our later comments or any matters not addressed in the DEIS will be completely ignored. That is why the scoping document is so important, so please get it right.

MR. MATRULLI: Thank you. John Swann.

MR. SWANN: I'm John Swann, S-W-A-N-N, and I'm a Utica resident speaking on behalf of the Community Foundation of Herkimer and Oneida Counties, 2608 Genesee Street, Utica.

I've been a Utica resident for more than thirty years, and I speak to you on behalf of the Community Foundation tonight as its executive vice-president.

As an organization committed to significant and continuing investment that enhances area resident's quality of life, the Foundation supports Mohawk Valley Health System's Integrated Health Campus project. The Foundation has invested in many of the area's not-for-profits for decades, including the vast majority, if not all of its institutional healthcare providers in both

counties.

Meeting the healthcare needs of regional residents is one of our continuing strategic priorities. The MVHS downtown project provides a unique opportunity to build a community asset for our collective future, one that will not only meet healthcare needs, but will also support and enhance urban connectivity and place-making through integrated design. Purposeful investment in our community's urban core through this unprecedented public/private project is not an option. It is a necessity.

It's important to the Community Foundation as a steward of community resources that the draft scoping document thoroughly address potential environmental impacts of this project. We have reviewed the document and found it to be thorough and wide-ranging in fulfilling that purpose. We agree with facts stated in its descriptive comments, and especially the stated project purpose.

On behalf of our President and CEO Alicia Dicks and our Board of Trustees, I would like to thank you, members of the City Planning Board, for

your dedication and commitment to this process. The Community Foundation looks forward to continued progress, both for the environmental review process now underway, and for MVHS downtown. Thank you.

MR. MATRULLI: Thank you. I'm not sure of this name. Is there a K. Revere?

MR. REVERE: Kevin.

MR. MATRULLI: I'm sorry.

MR. REVERE: It's okay. Kevin Revere, K-E-V-I-N, R-E-V-E-R-E. I'm the director of emergency services for Oneida County. We are the emergency managers for the county. We run the 9-1-1 center. I'm the fire coordinator for the county, and we also oversee the Stop DWI program.

I've got over thirty years in public safety experience. I have a bachelors degree from the University of Central Missouri. Go Mules. And one of the first papers I had to do in college in the early eighties was about boiling liquid expanding vapor explosions, which has been touted as one of the reasons not to build in that area. And I request you, as the Planning Board, to take that concern into consideration. My examination

of it is that it's not real. There is no need to move it because of the railroad tracks.

Hazardous materials are transported on vehicles, trucks, all over the country every single day. The explosions that you see and hear about that make national news, and they should, are unbelievably rare. And the chemicals that are transported on the tracks are also offloaded into vehicles that go along our highways all the time, but I do think that you should look into that and engage our department, engage the hospital, which is required by law to have emergency evacuation plans, emergency management plans. Our office works with all those agencies regularly, but it is a topic that has been brought up, and we'd be more than happy to engage with the Planning Board in this process, because it is an environmental concern.

In my years of experience in public safety, I also ran the Child Advocacy Center for about twelve, thirteen years. We investigated child sexual abuse in Oneida County. And just like the mentally ill, people need some -- some help. A lot of sexual abuse victims or rape victims are

brought to hospitals because there's no place else for them to go. There is no hospital in Oneida County that has today's functionality for victims, especially child victims of child sexual abuse, and mental health facilities. I personally interviewed children in waiting rooms because there was no place else to do it. It's not conducive to get a disclosure at that time.

I encourage you to even take a look at, as a Planning Board, that perhaps this project needs to be a little bit bigger and more floor space to accommodate the mentally ill and the children and rape victims who need to have a segregated space. They need a different approach. That has been done in medicine for a very long time, not here but across the country.

Lastly, as I mentioned, we run the 9-1-1 center. We dispatch first responders for over 100,000 calls. St. Elizabeth's on Genesee Street with all the intersections, all the traffic, is a huge problem. St. Luke's, they run into traffic problems all the time. This location is much more conducive to that. So thank you.

MR. MATRULLI: Thank you. I think next is

Stefan Rubitski.

MR. RUBITSKI: Good evening. Stefan, S-T-E-F-A-N, Rubitski, R-U-B-I-T-S-K-I. Hopefully you have that. 22 Main Street, Yorkville, New York.

This is a critical time for this Utica/Oneida County area, and we need to come to an agreement for -- about what we want to do here. And I'm neither for or against this, but we need to -- we need to look at alternatives, and that area that they want the hospital in is an eyesore. It -- it's in disrepair and something needs to be done in that area, development, some type of development. If it's not the hospital, what could go there? We need to think outside the box here, and we need to -- we need to come to an agreement and get along as a community. Thank you.

MR. MATRULLI: Thank you. Edwin Waszkiewicz.

MR. WASZKIEWICZ: My name Edwin "Butch" Waszkiewicz. That's W-A-S-Z-K-I-E-W-I-C-Z. I live at 1612 Harrison Ave in Utica. Actually my parents and my sisters moved in on September 1, 1950. I was born on September 4, 1950, and I've

lived there my entire life. So my neighbors aren't just lucky.

But I am here because I am "yes, hospital downtown" for all the right reasons. You're letting in a 67-year-old who, for the last seven years, has actually been an overnight patient about eleven times. It started out -- I went in for the nose job. They woke me up and I had an allergic reaction to the anesthesia.

So I asked the doctor, "You know, Doc, what's my blood pressure?"

He said, "It's about 297 over 197, when it's suppose to be 120 over 80."

And I kind of fainted off into the other world, but I came back. And after about forty-eight hours, I had reached the point where he could either send me home or keep me for another day.

But I said, "You know, Doc, I watched the room across me. They've got the masks on." They moved the guy who was in the other bed because they had to put the mask on him, and I was in worse shape so they moved him.

And then I walked down the hall, and the next

room down has those. So forty-eight hours after that incident, I had about a one hundred percent chance of catching what they had, and I said, "Doctor, send me home." And I was fortunate, I did not have to go back.

But that is one of the important things to think about, because most of the rooms there are going to be single. And one of the biggest problems -- you can look at the lists and they all have the problem where if person "A" has it, person "B" catches it. And that is a huge, huge issue. I was very lucky.

I had a cousin who died. His operation was successful, but he caught the infection. And we've all had friends that have had that problem, so this will be better from that viewpoint.

And the central location - north south, east and west - the roads are already there. We're all set. For the reasons of good health for a 67-year-old, who in the last six years spent about ten or eleven times in there, I'm in favor of it. In fact, one of my friends was Judge Ralph Eannace, and I hadn't seen him in a couple years. And I mentioned how many times I've been there.

He said, you know, if you went to Marriott or Hilton, you would've gotten points. Do they offer points? I jokingly asked somebody and they just laughed.

But for all the right reasons. At one of the Utica common council meetings, I did mention there's three parts to what these people have to be paid. The first part is the fair market value of their property, and building costs and marketing costs thereof. Thank you.

MR. MATRULLI: Thank you. Michael Lehman.

MR. LEHMAN: Good evening. I'm Michael Lehman. It's A-E-L, last name Lehman, L-E-H-M-A-N, 153 Ridge Road in Utica, New York. My family moved to Utica sixty-one years ago from the Albany area, so we've been paying Oneida and Utica taxes for that amount of time.

I grew up here, moved away to college and career, and moved back to Utica about five years ago. I'm trained as an architect and urban planner, and I think the best part of my education was that I've been taught to try to respect the other person's point of view and opinion, even if I didn't agree with them or didn't agree with them

very strongly. So I've tried to do that in all the meetings I've attended that MVHS had, and as I think one other person pointed out, try to breakdown the issues. And the issues basically are best quality healthcare possible.

And if for some reason we've got lumped into this, which has nothing to do with healthcare, economic revitalization. The facts as I have seen them from the health system and the other discussions during their community input sessions were that all of the stated Mohawk Valley Health System's healthcare goals can be achieved at their second location, the St. Elizabeth's -- the St. Luke's campus, actually again, by their own admission, and that is their second preferred location should the downtown site prove financially unfeasible, which I believe it has already because they can't afford to build the parking garage that they need. So I wish somewhere along the line that would be defined, as well.

The economical revitalization, again, it's barely conjecture on all the parts of all those folks who -- wishful thinking. All the

comparisons and the other examples that are made are not in downtown. One of the facts we are sure of is that the downtown hospital has actually stifled development downtown. Empire Bath & Beyond moved out and they're in Marcy now. Many businesses down there were planning to expand their businesses, and it's on hold pretty much until they see what's going on with the hospital project.

I think it's very important, again, not to be sucked in by shiny renderences [sic], etcetera, that basically are, again, eye wash. It's been said that this is a state-of-the-art building, yet in my conversations with MBBJ, the architects for the building, they -- at the direction of Mohawk Valley Health Systems, they will not be going after a LEED accreditation for the building, which is basically an energy-saving thing, that again, is typically done in state-of-the-art hospitals.

I have some experience in planning hospitals, and during my thirty-plus year career, I did facilities planning work for Albany Medical College and the Albany Medical Center Hospital, so I'm somewhat familiar with the issues involving --

that are very complicated in terms of designing hospitals, etcetera.

So again, I would ask you to consider all the things, and that truly progressive design, etcetera, would involve the use of newer urbanism reorganization and getting LEED accreditation on the building. So otherwise, it's just change for change's sake and not really progress, despite what all the other folks may tell you. Thank you.

MR. MATRULLI: Thank you. Joe Cerini.

MR. CERINI: Hello. My name is Joe Cerini, C-E-R-I-N-I. I own the location at 418 Lafayette Street. Presently the business is Citation Services. The building is in the age range of 160 years old. The building has been there since the 1850s, 60s. At one point it was a hotel. It's older than Hotel Utica. It was also a restaurant. After that, International Heater purchased the building. International Heater is why we have a Boilermaker race. That was their main sales floor. At that point, they built the rear building as an international shipping location to the -- from their building to the Erie Canal. They conglomerated the businesses, Carton Furnace,

Wheeler and three other companies under the International Heater name and sold from that location.

The area has been gradually improving over the last fifteen years. Seventeen years ago, you wouldn't want to be down there. My friends told me I was crazy, but it has been improving gradually, and it's already a walkable neighborhood from downtown Utica through to Varrick Street. You can see people walking constantly, people riding their bikes. It's not like it was ten years ago. People shouldn't be afraid to be down there.

What has happened with this hospital project three years ago? There should have been public input that was included before the politicians basically got ahold of this.

Now, the entire decision for the downtown was made before any consideration of environmental impact called for by legislation that was proposed and why the hospital is being given three-hundred million dollars.

I'd like to enter into record the 710 pages of e-mails in today's record, incorporation by

reference, that clearly show that the public input was not sought. The downtown site was a predetermined decision by Anthony Brindisi, Anthony Picente, Larry Gilroy and Steve DiMeo that pushed Mohawk Valley Health --

MR. LAWRENCE: Time's up, sir.

MR. CERINI: I'll enter the rest. Thank you.

MR. MATRULLI: Thank you. Robert Heins.

MR. HEINS: Robert Heins, 15 Clinton Place, Utica, New York 13501.

I've had a great experience. I've probably told the story too many times. In 1963, I was a professor at Syracuse and got us on a bus to come to Utica.

And we said, "Why are we coming to Utica?" And we were going to the Munson-Williams. Michele Deschampes [phonetic] was giving a lecture. It was the fiftieth anniversary of the arbor exhibit. And the lecture was so boring, and I was so arrogant, I left halfway through because I wanted to see Utica. And I walked down Genesee Street, and I had a chance to get the hamburger -- cheeseburger at Woolworth's. I saw the busy

corner and I saw what was happening then, and it was a multi-use mix.

Now I'm an architect. I've done 3,300 projects around the world. There's -- architecture is set designs. So you can make a building look like anything, but what you can't do are some of the things accomplished by the Auditorium Authority or Harbor Point Authority.

And one of the great opportunities at that particular location is to look at the possibility of that whole area as a donut. So that in the center of it, you put your hospital or box store or whatever - you know - would be going there. At this point, if it's a twenty-story building, it's a twenty-story building, but around the perimeter, you create a neighborhood. And how do you create a neighborhood? You work within the existing fabric that's there. You do condition reports of all the buildings that are there, per the State Historic Preservation Office guidelines. You find out what's going to be qualified for adaptive reuse.

I worked on the State committee that helped to draft SEQRA. I also was chairman of a hospital

for a major expansion. And so one of the first things that we did at the alternative sites we looked at -- and we decided to stay at the site that we were at. We looked at those sites and did Phase 1, and started a lot of Phase 2 development with the New York State DEC, looking at the property. We did traffic studies before we hired an architect, before we did anything. We did the geo-tech of the sites. We did the histrionic study about what was done at the property. So when the SEQRA discussions were being evolved, as New York State DEC was evolving after 1970, we would get together and say, one of the purposes of SEQRA is to study all alternatives. And we would say that, "Study all alternatives. Study all alternatives."

And the other thing is to ask questions. You're volunteering to serve on a Planning Board, and it's truly unique. The Planning Board is the lead agency for this particular project, the things that are in there.

I would just say one other thing. You cannot build 673,000 square foot based on prevailing scale for $500 a square foot. Please get the

budget correct as you're going into this, in all impacts, from infrastructure right on down.

MR. MATRULLI: Thank you. I think this is Lucretia Hunt.

MS. HUNT: Thank you. Lucretia Hunt, L-U-C-R-E-T-I-A. The last name is simple, Hunt, H-U-N-T. I live at 903 Bleecker Street in East Utica.

I am for the hospital. My daughter got sick and she lived in D.C. and we went to Georgetown. I never saw anything right in the middle of the city. You went around the business area, come down, and there you see the hospital, surrounded by everything, modern equipment and everything. We need some of this here. We need a modern hospital.

I know we have the three hospitals, and they're doing the best that they can, but we need to think outside of the box. We're always negative when it comes to Utica - negative, negative, negative. Don't you think it's about time we think of something positive?

We have an opportunity to do something now to move the city forward with everything else that's

going on. We've had a lot of statistics tonight and answered information that I wasn't even familiar with, but I am for the hospital, and I am for the future, and I do think we need a new hospital in the city. Thank you.

MR. MATRULLI: Thank you. Richard Tone. Is there a Richard here? This person lives on Perry Street in Buffalo.

MR. TONE: That's me. I don't wish to speak.

MR. MATRULLI: That's fine. Michael Mandia -- or Michele Mandia. Excuse me.

MS. MANDIA: Hi. My name is Michele Mandia. I live at 1436 Albany Street in Utica. I'm here because I was under the impression that this was a forum, because the hospital and the people involved in it did not present it to the public enough, according to the newspaper. The merger consolidation group came and said, "You didn't get involvement from the public." So I thought that's why we were here, but I feel a little hoodwinked because there's every department head from the county and the city here. So I feel a little hoodwinked by this meeting today.

But as I sit here, my head was spinning, because I want to thank everybody here for paying your taxes to New York State, because without you paying your taxes, I don't see Mr. Cuomo writing us a check for three-hundred million dollars out of his pocket. So I think where we got the three-hundred million is from everybody in this room and this state. So I'm glad we got the money but -- in regards to that, I only foresee the parking garage that's going to cost us money. My city taxes will be going up. My county taxes will be going up. My school taxes probably won't go up, because I'm on the School Board and we work diligently to keep them at a zero percent tax increase.

As a negotiator for my union that works for the hospital, our average person -- well some of the people make $9.40 an hour who've worked there for fifteen years. So if you took that and told them their city was going to go up, their county and their parking garage fee, because nobody's come out to tell us this. Is my parking garage going to be free? As an employee, do I get to park for free? Nobody's come out to tell us that.

So what I figured out is the average employee making $40,000 a year would probably have to work close to twenty years to make what the CEO makes in one year.

So I'd like you to take it back that -- everybody here, the new hospital is great to have, but I don't think anybody here has really found the impact on the taxpayer. I know it's great to have a new hospital, but you haven't told us what you're going to do, and how much my taxes were going to be increased? You know. Am I going to pay to park? Am I going to find a place to park once everybody else starts using the parking garage for other events?

So I think it's up to you to have more forums that aren't stocked with department heads from the county and the city.

MR. MATRULLI: Donna Beckett.

MS. BECKETT: Hello. My name is Donna Beckett, B-E-C-K-E-T-T, and my address is Norton Ave in Clinton, New York. I was not planning on speaking tonight, but I did list my name knowing that I could withdraw. And I am grateful, because my job is going to be much easier right now

because of those other people who've spoken before me.

When we first started speaking and some of the first people speaking, I was sitting there writing a few notes, because I was listening to what they were saving. And as you've heard, I got varying opinions. It was an opinion that it might be economic growth. It was an opinion that the condition of that neighborhood is not good. The opinion -- I worked in Oneida County Social Services for twenty years, so we had some of you here talking about that. I also worked in a hospital in a support service for fifteen years. I've been doing this for three years everyday. I did it with -- I came to it with an open mind. I thought, I wonder why they're doing it. And then I found out more. Okay.

So anyway, not so much about me. Also Genesis spoke, mentioned about the future, what a hospital would be like in seventy, eighty years, what healthcare would be like, what transportation would be like. I'm very aware of that. I worked in a hospital in 1980, 1985. I saw the changes. I -- working at a hospital at a young age, you

know how it is. You pay attention to it, even after you left that. And I know how rapidly things are changing.

So anyway -- and again, it is about healthcare. I am so grateful that I have as much information as I have. I, too, am a person who is not emotionally driven. I'm looking at both sides. I want facts. I want information. I don't want -- hopefully that it's an economic engine. Hopefully it will be wonderful.

So I think I'm going -- I just want to remind -- the simplicity of this is, please remember this audience clapped when those people who spoke and did not think it's a good idea. No one clapped, except for Lucretia, when who are in favor of it.

So -- and my final thing, although he hasn't interrupted yet. Let's have it both ways. Let's have expanded healthcare regional medical campus at St. Luke's. It's a perfect sixty-four acres. Use the money for healthcare and not to buy out people.

The final thing is that I, too, walk those streets, because I worked in Oneida County, and I saw it getting better. Not only a year and a half

ago, I went and did a survey, not time to push an agenda. I met all of them. So thank you.

MR. MATRULLI: Thank you. John Kent.

MR. KENT: Good evening. My name is John Kent, K-E-N-T. I'm commissioner of planning for the County of Oneida, and our address is 321 Main Street, Utica. I have some very brief prepared remarks, and I have a copy that I can read with you.

But just in light of something that was said a few minutes ago, I am a county department head, but I'm the head of a department that was required under SEQRA to take certain actions when it comes to new projects. So we are an interested agency under SEQRA, and we need to be here to have input into the process. So just to clarify that one point.

These comments I hope will be pretty brief. I would like begin my comments by complimenting the City of Utica Planning Board, acting as SEQRA lead agency, for its decision to elect to follow the formal scope and process in determining the topics and analysis of the potential environmental impacts of the Mohawk Valley Health System

proposed Integrated Health Campus, to be addressed in the draft Environmental Impact Statement. While SEQRA does not require scoping, electing to follow the formal scoping process will provide the most comprehensive and transparent discussion of the proposed MVHS IHC project.

As described in the New York State Department of Environmental Conservation's publication, The SEQRA Cookbook, the scoping process has six objectives: Focus the draft EIS on potentially significant adverse environmental impacts, eliminate non-significant or non-relevant issues, identify the extent and quality of information needed, identify the range of reasonable alternatives to be discussed, provide an initial identification of the mitigation measures, and provide the public with an opportunity to participate in the identification of the impacts. That's why we're here tonight.

A careful review of the draft scoping document reveals that it is diligent and meeting the six objectives noted above. The document clearly identifies potential significant adverse impacts, both those associated with the HIC [sic]

construction and the operation of the completed facility. It identifies existing information sources, as well as additional information required to make a final determination. Finally, it identifies potential mitigation measures, both for the construction and the operational phases of the IHC. The draft scoping document provides a solid framework upon which to build a draft environmental impact statement that fully addresses all relevant issues and concerns. We fully support the lead agency moving forward in an expeditious manner with the preparation of a draft EIS.

Thank you for the opportunity to comment on this important step in the process of this important project of major significance to the City of Utica, all of Oneida County, and the entire region. Thank you.

MR. MATRULLI: Thank you. Ronald Vincent.

MR. VINCENT: My name is Ron Vincent. I live at 477 Roseclair Avenue, Utica, New York. The last name is the same as the first, V-I-N-C-E-N-T.

Tonight we heard from a lot of people. There

was a lot of people here from the county. There was a lot of tax-exempt charity organizations. I'm here to speak as a taxpaying citizen, which there are many of in the City of Utica, Oneida County.

For three years, I think that's the time I heard earlier, three years we've been hearing from every politician from state, county, city, talking about this hospital. And we've even heard from the hospital people, and everybody said the same thing, that politicians say it has to go in this location in downtown Utica. We the taxpayers have listened to this for three years. And as I stand before you tonight, I'm sorry to say, I cannot in three minutes say as much as they have had time to say in three years. What you people should do is give the taxpayers, give the citizens one-on-one small group meetings, three more years to air our side of this, because we do have some good ideas, places where they could build a hospital where it wouldn't even cost them for the property or the building sitting on it, a place that I came up with to try and tell somebody where they could get a parking lot one-and-a-half mile long for only

one-and-a-half million dollars. Think of the money that's being spent to buy these buildings, the taxes that are coming off the tax rolls, and the money that's going to be invested before the first bulldozer comes onto the site, when they could save so much money.

Outside tonight, there was a group of union people saying they want these jobs because of the union. If they built that house -- or hospital at St. Luke's, you could have union builders up there. If it's going to cost so much money to build this hospital in downtown Utica, union people, let me bring this to your attention. If they're going to spend, say, ten percent of their money before they even start building this building, they might be tempted to hire non-union people.

I yield the rest of my time. Thank you.

MR. MATRULLI: Thank you. Donna Bills.

MS. BILLS: Good evening. My name is Donna Bills, B-I-L-L-S. I live at 1430 Old Burrstone Road, Utica, New York.

I didn't think I was going to be speaking. I thought, as another woman had said, that I was

going to be listening and getting information.

I also agree with her that I feel hoodwinked. From what the paper had said, it made it seem like it was going to be a question-and-answer forum and that we were going to be given more information on alternate sides besides downtown Utica, and apparently not so. I also agree with one of the other speakers that had mentioned that they are muddying the waters in regards to are we talking about land use or are we talking about healthcare.

There are many people that had spoken in regards to the healthcare, and they had many good credentials, and they told about all the good work that they do and all the good work that needs to be done, and I thank you for your service and keep up the good work, but that has nothing to do with destroying downtown Utica. We can still have all of that, and all those people out there yelling and carrying on from the union, they can have their jobs, as well. It's not a situation where there has to be a winner and a loser. We should be in this to all be winners. I've lived here my whole life, and I pay taxes, and I'm part of that aging group. I just turned 60. And I really

don't want to spend the rest of my life paying for a parking garage that doesn't even need to be there if the hospital was in a different location.

Land use. There is just so much land that you have and you're not going to get any more. And if you take a portion of the city that is just trying to revitalize itself and slap a hospital in the middle of it, you're going to be destroying something that you can't get back. I was so excited when we started to have things come back and little businesses popping up all over the place, and Utica actually being something that people would say, Oh, have you been to Utica Bread? Have you been here? Have you been there? All these little places that are coming up and the way that we were starting to connect the dots. We have a historic area on Genesee Street. We have Munson-Williams. We have the Stanley, and those are very impressive things for a city our size. We are really impressive, and people don't seem to take that into account. We have the auditorium.

They want me to wrap it up. Healthcare is one thing, and location is another thing. And they have not given any of the alternate places

this place could be when you have New Hartford saying, "Take my shopping center, please" and they're not interested. Thank you for your time.

MR. MATRULLI: Thank you very much. Phil Scalia.

MR. SCALIA: My name is Phil Scalia and I'm from Fort Plain, 21 Prospect Street, Fort Plain. The last name is spelled S-C-A-L-I-A.

I'm a professional photographer from Fort Plain. One of my favorite places to come for pictures is Utica. One of my favorite neighborhoods to go is the one that's under threat by this expansion project. The light in those few blocks is fantastic. I have three or four photos from there that are my favorites. Two of them are currently in a group show at Saratoga Arts. I invite everybody to go. It's up until June 16th.

One thing I know, you don't fix a problem by bulldozing irreplaceable architecture. They just don't build them like that anymore, to use the old saying, not to mention that it's unconscionable to do so by eminent domain.

I hope the Planning Board will consult with the City of Batavia to ask them how it went when

they tore out the heart and soul of their city in the seventies in the name of urban renewal, an unmitigated disaster by all accounts. Conversely the City of Baltimore had a visionary mayor in the seventies who created a homesteading program by which old buildings were sold for $100 to folks that wanted to renovate. It was a tremendous success.

In my opinion, Utica would be committing suicide by taking out these beautiful structures. They may be vacant now, but that is not a reason to tear them down. The economy moves in cycles. Save these businesses and homes. I urge the Planning Board to consider alternatives. I am one tourist you will lose. Thank you.

MR. MATRULLI: Thank you. James Zecca.

MR. ZECCA: Good evening. My name is Jim Zecca, Z-E-C-C-A. I am a resident of Utica, 2662 Hedgewood Road, South Utica.

I'm here tonight to talk about the red zone, as has been mentioned earlier by the emergency management folks. The red zone is a real concern that needs to be looked at in the SEQRA process, and I'm going to read a statement. I'll be

sending information, further information, to the Board for review.

But long freight trains coming through Utica carry hazardous, flammable and combustible materials far more dangerous than most people realize, and by knowing these facts, we have yet another major reason not to locate our only new hospital in this zone of danger called the red zone. Up to thirty of these types of trains, which are carrying very explosive fracking oil from the Dakota's that people don't know about, but this is happening everyday. Up to thirty of these types of trains now run through Utica every week, many having a hundred cars stretching a mile down the tracks. That is a 4,000 percent, 4,000 percent increase in this type of travel through this area in the past six years with this fracking oil. A high-risk red zone has been declared along both sides of the railroad tracks to prepare emergency response for spills, fire, toxic fumes and even explosions from a track failure or a train derailment, or just plain accident. And don't say it doesn't happen, because it happened just recently a few years back. We had a runaway

train from West Utica that slammed into the train station, and thank God nobody was killed in that accident.

The U.S. Department of Transportation puts out an emergency response guide annually. This is an official document by the U.S. government. Please review this document in your SEQRA review. Thank you very much.

MR. MATRULLI: Thank you. Is there anyone that wanted to speak that I didn't call?

UNIDENTIFIED SPEAKER: I do. I don't need that, because I have a loud mouth. My name is Krista [phonetic].

I'm going for his store and the trees. Trees help everything, and you guys want to take down trees. Trees are from God and everything.

And the noise. I live right there, okay? I live right there on Genesee Street, right next door. And if they build it -- if you guys build it, I'm moving because of the noise. I'm not going to put up with that noise all night long.

And I'm doing this for their store, because he's my friend. His girlfriend is a brain injury person and all that stuff. So go Wilcor.

MR. MATRULLI: Thank you. Would you mind giving us your name and address?

MS. MORTON: My name is Katie Morton. I live at 23 Parkway Drive, Whitesboro.

So I just want to share that my husband and I moved back from Charlotte, North Carolina to be in Utica and open a business. We wanted to move back here. We wanted to raise a family here. The more I hear about the downtown hospital proposal and the blatant disrespect and disregard for business owners, I'm beginning to wonder, like, why we ever did this without the respect. The more I hear -- give me one second.

One of the earlier speakers boasted about being a Utica citizen for seventy years, said he drives home that route and sees nothing there. Well, I drive home that route everyday, too, and neighbors like Columbia and Lafayette are exactly why we moved back to Utica. Those neighborhoods hold beauty and history and is unmatched whenever I travel to other cities. To say there's nothing there, you hear that all the time, but then why did thirty-five to forty properties and businesses have to have an offer letter to leave? There's

obviously something there.

Hear me when I say, I desperately want to have an updated medical center. I'm about to have my second baby here in two months and will be delivering at Crouse again because of my very common but high-risk pregnancy issues. We can't be secure and be accommodated here and be taken care of at the current MVHS hospital. That said, I'm hopeful about the new hospital proposal, not at downtown but in general. However, I rarely hear about the actual healthcare, so it's hard to say.

But let's highlight the environmental issues that I've had. The very blocks this hospital is supposed to be built in in the Columbia/Lafayette neighborhoods was once known as the furnace capital of America, just like Joe Cerini highlighted. So this is back in 1850. Those very blocks where the hospital wants to go now was -- let's see. Those mills and foundries aren't there anymore -- sorry, out of breath from being pregnant -- so now they're demolished and built over. So we want to go through and bring that all back up, expose it. I'm highly concerned of what

the contamination impact it will have on the health of those in the area once those blocks are exposed.

So that said, downtown Utica is far from replaceable. There's acres of properties to build a hospital in regard to our health, transportation, and urban growth, and if we have any hope of getting our future generations of families to want to live here. Thank you.

MR. MATRULLI: Thank you. Anyone else?

MR. BROCK: Good evening, ladies and gentlemen of the jury. My name is Jonathan Brock, 2 Tennison Circle, New Hartford, New York.

Now, we have been a part of this conversation from the very start, and actually this conversation started long before any of the public knew what was about to happen to our downtown. I just turned 30 years old in September, and I watched my entire high school graduating class move away from this area because of poor decisions, like placing a hospital within our downtown, or bulldozing a building because nobody saw the vitality in it. I recently graduated from Mohawk Valley Community College, and I will tell

you, there is no more an interest from the younger generation to stay here and maintain a living or have a future the way the generations before us have.

Now with that being said, with regard to the SEQRA process, I do agree, many feel hoodwinked tonight with regard to those in the room taking their time to speak, or rather our time. This decision is monumental, and yes it is transformant, but for what, why, and how much can we, a community like this, afford this decision long-term? Can healthcare in this community afford this long-term? Some people talk about a hospital that may be state-of-the-art on the outside, but we know, according to what it is the healthcare system has put out, it is not state-of-the art on the inside.

Now, as a student of architecture and one who has had the luxury of traveling and seeing many neighborhoods and many communities revitalize themselves, bring themselves back and maintain their integrity, the little bit that sometimes there's left. I do not agree that we should be bulldozing what little history we have or ripping

up what old streets or remnants of the boiler mess that we have in downtown Utica.

Now, this conversation should be about and only should be about healthcare. The idea that this is about -- somehow about transforming our downtown and economic development is sickening.

And not for anything, but somebody said it earlier. We should all get along, but you know what, I haven't seen a group dragged through the mud, their businesses, their families, their relationship and their own life by their own so-called friends as the way the people who've advocated against the downtown location, not against the hospital, but against the downtown location the way I have in this argument, and this dissertation, and even within this room.

Now with that being said, I hope that you guys completely and fully consider every location and disclose everything that you find to the public. Young and old, we deserve to know. Thank you.

MR. MATRULLI: Thank you.

MR. BROCK: I just want to add. I have an idea for revitalizing that neighborhood. There's

so many that see light in it. There's a $30,000 grant that's usually given out to a start-up business. I encourage more of that. I actually am a huge advocate of it. As a young person, we need more of that.

MR. MATRULLI: Thank you. I believe that's the last speaker. I want to thank everybody for coming, and I really want to thank everybody for their very comprehensive information that was given. I really do. I think it was quite helpful for us. Thank you very much.

I make a motion to close the meeting.

MR. COLON: I second that.

MR. MATRULLI: So moved.

(Whereupon, the Public Hearing concluded at 7:33 p.m.)

C E R T I F I C A T I O N

I, **NORA B. LAMICA**, Shorthand Reporter and Notary Public within and for the State of New York, do hereby CERTIFY that the foregoing record taken by me at the time and place noted in the heading hereof is a true and accurate transcript of same, to the best of my ability and belief.

Nora B. Lamica

NORA B. LAMICA

Patricia Knobloch, AIA
71 Ballantyne Brae
Utica, NY 13501

June 4, 2018

City of Utica Planning Board
Attention: Mr. Brian Thomas, Commissioner
City of Utica, Department of Urban & Economic Development
1 Kennedy Plaza
Utica NY 13502

Re: Comments on Draft Scoping Document 5-18-18; Mohawk Valley Hospital System SEQRA; sent by certified mail

Dear Mr. Thomas:

The following are my comments on the above-mentioned document:

1) On Page 3 it says that the decision to consolidate the two existing campuses to a single facility was motivated in part by the 'growing demand for healthcare due to the rapidly increasing and aging population in this region'. If there is a growing demand for healthcare, please address why the proposed new hospital will have fewer beds than the two existing campuses.

2) On the same page, it also says that this decision was based on 'the increasing need to improve accessibility and availability by attracting specialists and providing services that otherwise would not be available to our community'. Please clarify what additional specialists and services will be available at the proposed new hospital, or what specialties and services the proposed hospital hopes to attract.

3) Page 6, Storm Sewers: Please provide calculations and/or other analyses supporting the statement that the overall percent impervious surfaces resulting from development of the IHC is anticipated to be less than the amount of coverage under existing conditions, even without green infrastructure design features. Was a Sanborn Map Company application used in the analysis? If not, please include what applications or methodologies were used.

This seems especially critical because the document further states that flooding is not an issue (Page 11). Although not located in flood zone, excessive runoff can cause flooding conditions.

4) Will the project be in compliance with New York State's Smart Growth Public Infrastructure Policy Act? If so, please indicate how the current and future designs incorporate Smart Growth principles in anticipation of State Agency Smart Growth review. If the project will not be in compliance, why not?

5) Page 15, Impact on Transportation: The city's existing street patterns will be greatly affected by the proposed new hospital. Will the future traffic impact study address how Broadway, for example, will be changed to become a main access road for the hospital? Will the study include all new traffic signals and signs?

6) Page 25, Alternate Sites: Please comment on how this list of four alternate sites was established. Did it come from the earlier site selection study where twelve sites were considered? Please include that earlier study as an appendix to the final document.

Thank you for your consideration.

Very truly yours,

Patricia Knobloch, AIA

CC:

Portia Lee, Managing Director, Public Finance and Portfolio Monitoring, DASNY

Stephen D. Curro, P. E. Managing Director, Construction, DASNY

Ron Epstein, Assistant Commissioner for Policy and Planning, NYSDOT

From: Brian Thomas
To: Steve Eckler; kbennett@bsk.com
Subject: FW: Comments on Draft Scope, MVHS Downtown Hospital
Date: Friday, June 8, 2018 1:07:32 PM
Attachments: Montecalvo 6-7-18 Comments wcc re Draft Scoping Doc.pdf

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Steve and Kathleen-

I assume that you would like me to forward these to you as I receive them??

Brian

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
Utica, New York 13502
(315) 792-0181 phone
(315) 797-6607 fax

From: Frank Montecalvo [mailto:frankmontecalvo@roadrunner.com]
Sent: Thursday, June 07, 2018 10:01 PM
To: Brian Thomas <bthomas@cityofutica.com>
Cc: Cathy Lawrence <concerned@nhconcernedcitizens.com>; Michael P. Galime <mgalime@cityofutica.com>; Stephen N Keblish Jr <snkjr81@gmail.com>; Brett Truett <btruett@softnoze.com>; villagenh@villageofnewhartford.com; John Byrne <jbyrne@reclaimnewyork.org>; Jim G. Brock, Jr. <Brock_Jim@nlgroupmail.com>; Michael Bosak <michael_bosak@hotmail.com>; Michael Lehman <mjlehman1@gmail.com>; Karen Corrigan-Rider <karen@wilcor.net>; Shawn Corrigan <shawn@wilcor.net>; pmiscione@townofnewhartfordny.gov
Subject: Comments on Draft Scope, MVHS Downtown Hospital

Dear Utica Planning Board:

Attached please find my comments to the 5/18/18 Draft Scoping Document on the proposed MVHS Downtown Utica Hospital Project.

Thank you for your consideration.

Frank Montecalvo

--
Frank Montecalvo
315-570-3535 (Talk, Text)
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June 7, 2018

City of Utica Planning Board
1 Kennedy Plaza
Utica, NY 13502
Attention: Mr. Brian Thomas, Commissioner
City of Utica, Department of Urban & Economic Development

Ref: Draft Scoping Document, MVHS Proposed Downtown Hospital

Dear City of Utica Planning Board:

This letter is in response to the Utica Planning Board's request for public comment on the above-referenced Draft Scoping document. As detailed below, the Draft Scope contains incorrect and misleading statements, omits relevant information, and dismisses or fails to mention the need to develop certain topics in the Environmental Impact Statement (EIS). Without correction and further definition in the Final Scope, the EIS will provide involved agencies with an inaccurate, misleading, and incomplete picture of the proposed project upon which to base their SEQR findings "that consistent with social, economic and other essential considerations, to the maximum extent practicable, adverse environmental effects revealed in the environmental impact statement process will be minimized or avoided." (Environmental Conservation Law 8-0109 (8)). To ease reference, the discussion below applies the labels found in the Draft Scope.

Section 1.2 Project Purpose

(A) The Applicant failed to identify the purpose(s) to be served by locating its project in Downtown Utica as opposed to the other sites it considered. The public has been told numerous times that Mohawk Valley EDGE used the Applicant's criteria to produce the site selection study upon which the Applicant's choice of the Downtown location was based. That study is still secret, so the public still does not know the Applicant's criteria. Applicant's spokesperson, Mr. Scholefield, has advised that the site selection study would be made public as part of the SEQR process (eg., video at the 20:00 mark found at http://www.uticaod.com/news/20180509/compassion-coalition-mvhs-deal-unclear). That time has now arrived and **the siting study should be included in the EIS as an appendix.**

(B) Page 3 of the Draft Scope incorrectly states that "[t]he new MVHS IHC and hospital will replace the St. Luke's and SEMC campuses" and "consolidate patient services to one campus." As acknowledged elsewhere in the Draft Scope, MVHS will retain certain patient services at both St. Luke's and SEMC campuses. Not disclosed is MVHS' retention of the 202-bed skilled nursing facility (formerly called the St. Luke's Home) on the St. Luke's Campus. Although some functions from two buildings will be combined into a new building at MVHS IHC, significant patient services will be retained at the old sites, making the characterization of the project quoted above incorrect and misleading. There is no replacement of the SEMC and St. Luke's Campuses. Rather, the MVHS IHC Downtown campus is being added to the Applicant's responsibilities, potentially threatening its financial stability.

(C) The Applicant claims existence of a "growing demand for healthcare due to the rapidly increasing and aging population in this region." Applicant needs to substantiate this claim with actual numbers of people (not percentages). US Census statistics indicate that regional population continues a decades-long decline and the number of people in Utica over 65 years old has also declined.

(D) Applicant needs to substantiate how a new facility will attract specialists to our region when the prerequisite for specialists is a sufficient population base to make doctor specialization economically feasible. Our population is declining.

(E) Although Applicant references Public Health Law 2825-b which indicates that the purpose of the State Grant is to "consolidate multiple licensed health care facilities into an integrated system of care" the Applicant omitted any explanation of how its project meets the grant's objective. The explanation is needed because Applicant's proposal to move the hospital structure away from the retained services at the old sites (particularly the removal of the hospital from the St. Luke's Campus that will continue to hold a nursing home and rehab facility) seems to directly oppose the intent of the legislation. In addition, the removal of the hospital from the St. Luke's Campus to Downtown will place at least 2 miles between the new facility and the existing de facto "medical district" composed of the numerous medical providers that have recently located near St. Luke's along Burrstone and French Roads in New Hartford and in the Utica Business Park, including an outpatient surgical center. Because they are recent, these providers are unlikely to follow the hospital Downtown. Increasing the distance between the hospital and these providers seems contrary to good patient care.

Section 1.3 Project Description

A. Although the project description mentions the acreage of private property that Applicant will need to acquire, it fails to disclose that this will involve displacement and/or loss of approximately 40 businesses/not-for-profits and the Utica Police Garage, permanent loss of taxable properties, and the permanent loss of properties that have in-place the public infrastructure and zoning needed to support small business development. Arguably these are the best properties for small businesses in the region due to their location in Utica's Central Business District. Utica will lose current tax revenue, important social services, jobs, and opportunities to grow jobs and its tax-base in the future. Neither the Draft Scoping Document nor any of the Application documents make any attempt to estimate the sales tax currently generated within the project area that will be at risk, to estimate the cost to duplicate the police garage off-site, to estimate the cost to duplicate off-site the public infrastructure now available for entrepreneurial growth, to estimate the non-hospital jobs currently within the project area that will be lost, or estimate the cost to duplicate lost businesses and not-for-profits elsewhere. Based upon the history of actual projects in Utica and Rome, most of the small businesses and their jobs will be lost. Although the Applicant will be liable for only a small fraction of these losses, they are real and represent a regional social and economic cost of the proposed project that will fall upon individuals, business owners, and taxpayers. State and local governments have spent literally hundreds of millions of dollars to create a relative handfull of jobs locally. Will we have to spend such huge amounts again just to make up for the jobs that this project will consume? The Applicant needs to clearly state what it is asking Utica and the region to risk in exchange for Applicant locating its proposed state-of-the-art health care facility in Downtown Utica.

B. The Draft Scope erroneously claims that +/- 373 inpatient beds will be transitioned to MVHS IHC in Downtown Utica. That statement is contradicted by the NYS Department of Health's Needs Analysis, which states that 24 of those beds will remain at the St. Luke's Campus for Physical Medicine and Rehab. That means that the MVHS IHC will only transition 349 beds to Downtown Utica. The Final Scope needs to contain an accurate description.

C. The Draft Scope indicates that the proposed project will involve construction of approximately 2650 parking spaces, or greater than 7.5 spaces per hospital bed. This far exceeds the design requirements used elsewhere (e.g., Houston, TX 2.2 per bed; Palm Beach County, FL

1 space per 2 beds; St. Paul, MN 0.5 spaces per bed). Every space impacts the environment. Unneeded spaces create unnecessary impacts. The EIS needs to substantiate the number of parking spaces planned.

D. Applicant's description of disposition and re-purposing of existing hospital campuses is unacceptably vague given the region's history of blight caused by the abandonment of hospital buildings at the Central New York Psychiatric Center. The EIS must contain assurances that Applicant's abandonment of facilities will not create new blight in South Utica and New Hartford. As mitigation, consideration should be given to requiring MVHS to post a performance bond to fund continued maintenance and/or demolition of the abandoned hospital buildings if they are not repurposed within an appropriate specified time period.

E. Given that Applicant proposes to abandon its hospital tower at St. Luke's and/or change its use, it must be determined whether Utica's decades-old agreement to provide fire protection for the building will still apply or whether that responsibility and cost will fall upon the Town of New Hartford.

Section 1.4 Potentially Significant Adverse Environmental Impacts

The Draft Scope needs expand to include the following information under the following "Environmental Topics":

A. **Impact on Surface Water:** Utica currently has a number of combined sewers and combined sewer overflows which pass untreated sewage and/or tainted runoff directly into the Mohawk River, bypassing the Water Pollution Control Plant, during periods of wet weather. (1) The new hospital building will produce a volume of raw sewage concentrated at one location. (2) The acres of new parking will produce a volume of tainted runoff. Both will empty in an area of Utica where sewer infrastructure is old and likely to combine stormwater and wastewater. The EIS needs to identify the routes wastewater and runoff from the proposed project will take to their ultimate point of disposal in the Mohawk River, whether the sewers same will pass through are separate, combined, or both; whether they are adequate to handle the flows calculated; and whether or not any wastewater or tainted runoff will bypass the Water Pollution Control Plant and enter the River untreated. Flows from the proposed "U-District" adjacent to the hospital site should also be considered as a cumulative impact. Relocating the proposed project to the St. Luke's Campus should be considered to avoid these and new all surface water impacts (see "E" under Section 1.9 Reasonable Alternatives below).

B. Impact on Groundwater: Relocating the proposed project to the St. Luke's Campus should be considered to avoid all new groundwater impacts (see "E" under Section 1.9 Reasonable Alternatives below).

C. Impact on Flooding: Flooding is dismissed as an issue by the Applicant based upon the project area not being within a floodway or 100/500 year floodplain as shown on federal maps. However, the lack of a floodway designation does not eliminate flooding as a substantive and significant issue. On July 1, 2017, significant flooding (causing abandonment of cars, risk to human life, and property damage) occurred on a newly reopened section of the North-South Arterial and adjacent Lincoln Avenue in an area labeled "area of minimal flood hazard" on the federal map. Per media reports State DOT officials claimed that their drains worked properly but indicated there was insufficient capacity in the stormsewers or receiving stream to prevent the flooding from occurring. This flooding occurred approximately one half-mile from and at a higher elevation than the project site. The project description in the Draft Scope indicates that some storm sewers will be removed, some existing will be used, and others will be constructed with a connection to the State DOT stormsewer line. The proposed project will create acres of new, unbroken pavement (i.e., less able to retain/slow runoff than a patchwork of old/broken pavement, sidewalks, roofs, yards, etc.). Applicant's mere claim that the proposed project will increase pervious surfaces does not resolve the question. Given the proximity of the project area to a known area of urban flooding, the potential that some of the same overwhelmed systems may be depended upon to carry away storm water from the project site, the likely increase in amount and speed of runoff from new pavement (which would increase water depth wherever flow is impeded), and the potential of risk to human life and property, the EIS must contain calculations of the amount of runoff from the project site using appropriate design criteria, and identification and assessment of the capacities of the systems/streams that will be used to convey runoff away from the project site without creating new problems downstream. Runoff from the proposed "U-District" adjacent to the hospital site should also be considered as a cumulative impact. Relocating the proposed project to the St. Luke's Campus should be considered to avoid all potential flooding impacts (see "E" under Section 1.9 Reasonable Alternatives below).

D. Impact on Air: The proposed project will close portions of several streets including Cornelia (which connects Oriskany Boulevard with Court St.) and Lafayette (which connects Bleecker St. from East Utica with portions of West Utica), forcing drivers on these streets to detour over non-direct routes, lengthening their trips, increasing

traffic, and resulting in corresponding increases in air-pollution. The hospital itself will be a new traffic and air pollution generator. Cumulative impacts from anticipated projects nearby also need to be addressed. These impacts on air should be assessed in the EIS. Relocating the proposed project to the St. Luke's Campus should be considered to avoid the operational impacts to air, and minimize the numbers of persons exposed to construction impacts to air (see "E" under Section 1.9 Reasonable Alternatives below).

E. Impact on Aesthetic Resources including Lighting: Relocating the proposed project to the St. Luke's Campus will minimize both construction and operational impacts (see "E" under Section 1.9 Reasonable Alternatives below).

F. Impact on Historic and Archeological Resources: Relocating the proposed project to the St. Luke's Campus will completely avoid impacts to Historic and Archeological Resources (see "E" under Section 1.9 Reasonable Alternatives below).

G. Impact to Transportation: The proposed hospital will generate new traffic for Downtown that may exceed street capacity, particularly when considered cumulatively with other projects anticipated nearby. Traffic will be exacerbated by the project's proposed street closures described at D. above. Relocating the proposed project to the St. Luke's Campus will avoid all the operational transportation impacts and minimize most construction impacts (see "E" under Section 1.9 Reasonable Alternatives below).

H. and I. Impacts on Utilities and Impacts on Energy: Applicant fails to disclose, and the EIS needs to address, the impact of the proposed project on the Applicant's Co-Generation Facility recently constructed on the St. Luke's Campus but shared with Utica College, whether it will remain economically viable, or whether the power capacity will be wasted when the hospital tower is shut down. Cumulative impacts to Utilities and Energy from anticipated projects nearby also needs to be considered. Relocating the proposed project to the St. Luke's Campus will minimize the need to reconfigure utilities (water, sewer, electric) and the impacts from doing so (see "E" under Section 1.9 Reasonable Alternatives below).

J. Impact on Noise and Odor: Relocating the proposed project to the St. Luke's Campus can be expected to minimize construction impacts, and avoid operational impacts since the need to demolish old buildings and remove old public infrastructure and contaminated soil and debris would be minimized(see "E" under Section 1.9 Reasonable Alternatives below).

K. Impact on Human Health: Although the Applicant makes reference to the CSX Railroad Tracks about 900 feet north of the project site, the existence of an Oneida County Comprehensive Emergency Management Plan, and expected coordination with various Emergency Response entities, Applicant fails to mention that Bakken crude oil is regularly transported over railroad tracks within a half-mile of the project site, that accidents have occurred in the past on these tracks, and that when accidents involving such cargo occur, evacuation within a half mile of the accident site is often necessary. Although the probability of such an accident may be considered by some to be remote, the consequences can be disastrous, as demonstrated by the 7/6/2013 Lac-Mégantic, Quebec accident. These unstated facts substantiate that an issue exists. The potential consequences make the issue significant. Given the potential risk to human life, the EIS must contain an assessment of whether or not an evacuation of what will become Greater Utica's only hospital will be feasible in the event a Lac-Mégantic-style accident were to occur. If evacuation is determined to be feasible, an evacuation plan should be included as an Appendix to the EIS. Relocating the proposed project to the St. Luke's Campus, which is out of the danger zone, would avoid this particular potential impact to human health. It will also avoid introducing the new impacts already mentioned in the Draft Scope into the Downtown Utica neighborhood(see "E" under Section 1.9 Reasonable Alternatives below).

L. Consistency with Community Character and Plans: Applicant fails to disclose that the site of the proposed project lies within the Gateway Historic Canal District (an area bounded by Genesee, State and Columbia Streets and the CSX Tracks) which has its own specific master plan, that said plan recommended amendment of the zoning regulations for the district to encourage mixed-uses by establishing building-form requirements, that the Utica Planning Board unanimously recommended approval of the zoning amendment, that the Oneida County Planning Department recommended approval of the amendment, and that on 3/16/2005 the Utica Common Council unanimously approved the amendment. This neighborhood-specific plan and building-form requirements are consistent with the more general Utica Master Plan approved by the Council in 2011 which envisions mixed uses and "walkability" Downtown. Because they have been approved by the Common Council, it is understood that these plans and requirements are binding on the Planning Board and all who propose building within this district, and cannot be overridden with a mere site plan approval. Based upon Applicant's plans revealed to the public thus far, the proposed project materially conflicts with these officially approved/adopted plans and goals. Furthermore, since the existing street grid was established by city ordinances over the years, Applicant's proposal to close portions of streets for the proposed

project also presents a "material conflict" with the community's plans and goals as officially adopted. Per 6 NYCRR 617.4(vi), these material conflicts are *per se* a substantive and significant adverse environmental impact that either must be mitigated by redesign of the proposed project to conform to the aforesaid requirements, or avoided by relocating the proposed project to either the St. Luke's Campus or the Psych Center Campus (see "E" under Section 1.9 Reasonable Alternatives below).

M. Impacts on Solid Waste Management: Relocating the project to the St. Luke's Campus will minimize impacts related to demolition.

N. Environmental Justice: The proposed project not only threatens the continued existence of non-hospital jobs in this environmental justice neighborhood, but also threatens several charitable services located there. Relocation of the proposed project to either the St. Luke's Campus or the Psych Center Campus would totally avoid these impacts.

Section 1.5 Cumulative Impacts

The EIS needs to develop the information on cumulative impacts identified at Section 1.4 A, C, D, G, H and I above, all of which could be avoided by relocating the proposed project to either the St. Luke's Campus or the Psych Center Campus(see "E" under Section 1.9 Reasonable Alternatives below).

Section 1.6 Unavoidable Adverse Environmental Impacts

Determination of unavoidable impacts must be made with reference to both the St. Luke's Campus and Psych Center Campus as reasonable alternative sites to allow a comparison regarding which site better minimizes or avoids adverse environmental impacts. Involved agencies will not have a sound basis for their SEQR findings without this information. For the reasons explained at "E" under Section 1.9 Reasonable Alternatives below, it is believed that the St. Luke's Campus best minimizes or avoids adverse environmental impacts.

Section 1.7 Irreversible and Irretrievable Commitment of Resources

The EIS summary should include the existing streets and other public infrastructure that will be removed; the buildings to be demolished including the police garage; the businesses and associated jobs, income and personal wealth that will be lost; the loss of taxes (property and sales) to local jurisdictions; and the lost potential for Utica to grow jobs and tax base through conversion of developable acreage into parking lots and hospital related structures. This topic

should also include a similar summary for the St. Luke's Campus and the Psych Center Campus alternatives to permit a comparison to be made.

Section 1.8 Growth Inducing Aspects

This section of the EIS should include (A) consideration of "negative growth" with associated impacts (the spread of blight and waste of community resources), (B) discussion of whether the intent of the State's Smart Growth Policy (Environmental Conservation Law Article 6) will be implemented, and (C)substantive evidence and reasoned elaboration to back up conclusions rather than speculation and forward looking statements. Currently available information suggests that the proposed project, when completed, will exacerbate the region's *negative* population trends through the *destruction* of jobs. Hospital jobs will be reduced due to the reduction in hospital beds from 571 to 373 (see the NYS Department of Health's Needs Analysis). Most non-hospital jobs (as yet uncounted) associated with the approximately 40 entities currently within the downtown hospital footprint will disappear based upon the 90%+ closure rate experienced by Rome, NY businesses previously in the footprint of its Ft. Stanwix urban renewal project. The proposed project's occupation of 25 Central Business District Acres, primarily for parking, not only will remove this acreage from private development but also drive up the cost of remaining CBD property by restricting supply. That will discourage new startups and the creation of new jobs. Meanwhile the City of Utica will be burdened with providing municipal services to new facilities that do not generate taxes, raising taxes for everyone else and making Utica less attractive for investment. The excessive parking facilities will foster more dependency on the automobile. Simply put, the proposed project will replace an urban neighborhood that contributes to its upkeep with suburban sprawl that will not. The EIS needs to not only address these concerns, but also acknowledge that they could be minimized by placing the new facility on the St. Luke's Campus.

Section 1.9 Reasonable Alternatives

A. This section of the Draft Scope repeats the inaccurate, misleading statements and omissions addressed in "Section 1.2 Project Purpose" above. My comments there are incorporated here by reference. Please correct these elements in the Final Scope.

B. In its Certificate of Need Application, Applicant has interpreted the State's Grant as requiring a site within Oneida County's "largest population center" by appending the words "which is Utica" that do not appear in the law. Applicant now, inconsistently, lists the St.

Luke's Campus (in New Hartford) and the New Hartford Shopping Center as "reasonable alternatives" to be considered. Since it would be "unreasonable" for agencies to consider alternate sites that do not qualify for the Grant, the listing of New Hartford sites as "reasonable alternatives" should be construed as both a waiver of future arguments that the legislation requires the proposed project to be within Utica, and as an admission that the identified sites in New Hartford are located "within the largest population center" of Oneida County.

C. **The New Hartford Shopping Center** must be rejected as a "reasonable alternative" to be considered in the EIS because:

1. It was not one of the several sites considered in Applicant's secret siting study and presumably does not meet the Applicant's criteria.
2. Applicant neither owns nor has a purchase option on the site (see 6 NYCRR 617.9(b)(5)(v) ('g')).
3. The proposed use is inconsistent with the Village of New Hartford's zoning ordinance.
4. Conversion to tax-exempt status would likely create unacceptable and destabilizing financial consequences to the Village.
5. Forcing the existing businesses to move will likely result in permanent closures, unacceptable job losses, potential blight elsewhere in the Village, and sprawl.

D. **The Utica Psychiatric Center** is appropriately considered as a reasonable alternate site because it is located within the County's "largest population center," was included in Applicant's secret siting study, and, thus, presumably meets the Applicant's base criteria. This site needs to be weighed against the proposed Downtown and St. Luke's sites as to environmental impacts (both those identified above and, perhaps, others) and a determination made as to which site minimizes adverse impacts to the maximum extent. In discussing this site, the EIS needs to elaborate on or note the following:

1. Applicant lacks ownership or a purchase option to the site (see 6 NYCRR 617.9(b)(5)(v) ('g')).
2. The proposed use of the site would be consistent with zoning, applicable local plans, the street grid, and prior site history (involving hundreds of patients and staff on site at any particular time). There would be no adverse change to community character. Bringing back a healthcare related use to the site could reverse the neighborhood decline that followed abandonment of Psych Center buildings.

3. Operational impacts to the environment could be expected to be similar to those of the past but without an actual study and comparison of what needs to be constructed to what is now there, their significance is unclear.

4. Construction impacts to the environment and sensitive receptors off site could be buffered by both the larger site (several times the size of the Downtown site), and by less intense land uses in the surrounding neighborhood than what is Downtown. Fewer buildings to raze on this site also suggest fewer impacts than at the proposed Downtown site.

5. This site presents fewer opportunities to minimize impacts through the reuse of ancillary facilities than is possible on the St. Luke's Campus.

6. The larger campus suggests that the need for a parking garage could be replaced with surface parking.

7. Since the land is already tax-exempt institutional and existing uses would not have to be dislocated, all the adverse economic, social, business, jobs, smart growth, sprawl, environmental justice and tax consequences associated with the Downtown site would be avoided.

E. **The St. Luke's Hospital Campus** is appropriately considered as a reasonable alternate site because it is located not only within, but at the virtual center of the County's "largest population center" making its location convenient to the entire region that will be served by the new facility. As Applicant's acknowledged "back-up" to the Downtown site (Applicant was not required to choose a back-up), the Applicant cannot now credibly deny that the St. Luke's Campus will meet ALL its needs. This site needs to be weighed against the proposed Downtown and Psych Center sites as to environmental impacts and a determination made as to which site minimizes adverse impacts to the maximum extent. In discussing this site, the EIS needs to elaborate on or note the following:

1. The St. Luke's Campus is the ONLY site under consideration for the proposed project that the Applicant actually owns or controls(see 6 NYCRR 617.9(b)(5)(v) ('g')).

2. Per the following Table (taken from the NYS Department of Health's Needs Analysis) if the new facility were to be constructed on the St. Luke's Campus, it would result in a negligible increase of **THREE BEDS.**

Beds: Existing and Proposed				
	St. Elizabeth	St Luke's	Change	New Facility
Coronary Care		8	0	8
Intensive Care	20	22	0	42
Maternity		26	-3	23
Medical / Surgical	149	238	-147	240
Neonatal Continuing Care		4	-4	
Neonatal Intermediate Care		8	0	8
Pediatric	8	14	-14	8
Physical Medicine and Rehab		**24	0	**24
Psychiatric	24	26	-6	44
Total	**201**	**370**	**-174**	**373**
*** Remaining at St Luke's Campus*				

Source: HFIS 2017

This suggests that the variety and intensity of operational environmental impacts of locating the new facility on the St. Luke's Campus should be virtually identical to those associated with the facility that is there now, **i.e., NO new or increased impacts to the environment should be expected at the St. Luke's site.** This includes impacts to surface water, groundwater, flooding, air, aesthetic resources, transportation, utilities, energy, noise, odor, human health, and solid waste management.

3. Locating the new hospital facility on the St. Luke's Campus (which is more than double the size of the proposed Downtown MVHS IHC) will minimize the environmental impacts associated with construction because (a) the need to bulldoze an entire neighborhood that is likely to contain asbestos and other contaminants from prior uses is eliminated;(b) the **proposed project can and should be scaled back to be essentially a replacement of the existing hospital tower,** eliminating the need to duplicate existing ancillary, non-healthcare related facilities that can be re-used, such as the recently constructed medical office building, new cafeteria, new co-generation plant, helipad, and parking lots; (c) the excessive parking proposed for Downtown can be eliminated;(d) the larger site and less intense land uses in the surrounding neighborhood with much space between nearby buildings and the site will buffer impacts to off-site receptors.

4. New areas of environmental concern would be sensitive receptors on site, and a small federal wetland on site. The sensitive receptors can be dealt with as they were in the past given that the existing hospital tower has undergone several major additions over the years of its existence without interruption in service. The emergent wetland is of minimal environmental significance, has been previously encroached upon by the Applicant for a roadway and parking lot without regulatory problem, could be easily replaced or moved to a more convenient location, or be avoided altogether given the large size of the site.

5. The St. Luke's site is far enough away from the Bakken Crude transport route to eliminate all possibility of having to evacuate the facility in the event of a rail accident.

6. The proposed project at the St. Luke's Campus would be fully consistent with Town of New Hartford zoning, plans, and involve no change to community character.

7. Since the St. Luke's Campus is already tax-exempt, institutional, and existing uses would not have to be dislocated, the adverse economic, social, business, jobs, smart growth, sprawl, environmental justice and tax consequences associated with moving services to the Downtown site would be avoided.

8. Placing the new hospital tower on the St. Luke's Campus (a) eliminates the need for the Applicant to establish and maintain an additional medical campus, (b) advances the Grant's purpose to "consolidate multiple licensed health care facilities into an integrated system of care," (c) will maintain the proximity of hospital treatment to the providers in the region's de facto medical district consistent with good patient care.

Section 1.10 Elements of the DEIS

A. The Draft Table of Contents for the Draft EIS will have to be revised to reflect the concerns detailed above.

B. Appendices must include the complete Site Selection Study and an Evacuation Plan.

Section 1.11 Irrelevant or Non-Significant Issues or Impacts

Impacts on Flooding must be eliminated from this list for the reasons detailed above under Section 1.4 C.

Thank you for your attention to these matters.

Very truly yours,

Frank Montecalvo

Via Certified Mail and E-Mail bthomas@cityofutica.com
CC: LIST ATTACHED

COPY LIST:

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snkjr81@gmail.com

Brett Truett & Jim Brock, No Hospital Downtown
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Hon. Michael Galime, President, Utica Common Council
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Hon. Paul Miscione, Supervisor, Town of New Hartford
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Hon. Donald Ryan, Mayor, Village of New Hartford
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Ms. Judy Drabicki, Director, Region 6
NYS Department of Environmental Conservation
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Mr. Udo Ammon, Director, Healthcare Facility Planning, Licensure and Finance
Bureau of Architectural & Engineering Facility Planning
New York State Department of Health
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Mr. Robert S. Derico, RA, Senior Environmental Manager
Office of Environmental Affairs
Dormitory Authority of the State of New York
515 Broadway
Albany, NY 12207

From: Brian Thomas
To: Steve Eckler; kbennett@bsk.com
Cc: Chris Lawrence
Subject: FW: Send data from MFP07716197 06/14/2018 09:07
Date: Thursday, June 14, 2018 9:20:01 AM
Attachments: DOC061418-06142018090726.pdf

Another SEQRA scoping comment . . . . .

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
Utica, New York 13502
(315) 792-0181 phone
(315) 797-6607 fax

-----Original Message-----
From: Urban Scan [mailto:ubrancopy@cityofutica.com]
Sent: Thursday, June 14, 2018 9:08 AM
To: Brian Thomas <bthomas@cityofutica.com>
Subject: Send data from MFP07716197 06/14/2018 09:07

Scanned from MFP07716197
Date:06/14/2018 09:07
Pages:2
Resolution:600x600 DPI

ANTHONY J. PICENTE, JR., *County Executive*
JOHN R. KENT, JR., *Commissioner*

Boehlert Center at UNION STATION

(315) 798-5710
FAX (315) 798-5852
planning@ocgov.net

Oneida County Department of Planning

Boehlert Center at Union Station, 321 Main Street, Utica, NY 13501

June 7, 2018

City of Utica Planning Board
Attention: Mr. Brian Thomas, Commissioner
City of Utica, Department of Urban & Economic Development
1 Kennedy Plaza
Utica, NY 13502

RE: SEQRA Draft Scoping Document
Mohawk Valley Health System (MVHS)
Integrated Health Campus (IHC)

City of Utica Planning Board:

I would like to begin my comments by complimenting the City of Utica Planning Board, acting as SEQRA Lead Agency, for its decision to elect to follow the formal scoping process in determining the topics and analysis of the potential environmental impacts of the Mohawk Valley Health System (MVHS) proposed Integrated Health Campus (IHC) to be addressed in a Draft Environmental Impact Study (DEIS). While SEQRA does not require scoping, electing to follow the formal scoping process will provide the most comprehensive and transparent discussion of the proposed MVHS IHC project.

As described in the New York State Department of Environmental Conservation's publication ***The SEQR Cookbook***, the scoping process has six objectives:

- *"focus the draft EIS on the potentially significant adverse environmental impacts;*
- *eliminate non-significant and non-relevant issues;*
- *identify the extent and quality of information needed;*
- *identify the range of reasonable alternatives to be discussed;*
- *provide an initial identification of mitigation measures; and*
- *provide the public with an opportunity to participate in the identification of impacts."*

A careful review of the Draft Scoping Document reveals that it is diligent in meeting the six objectives noted above. The document thoroughly identifies potential significant adverse impacts, both those associated with the IHC construction and the operation of the completed facility. It identifies existing information sources as well as additional

information required to reach a final determination. Finally, it identifies potential mitigation measures, again both for the construction and operational phases of the IHC.

The Draft Scoping Document provides a solid framework upon which to build a Draft Environmental Impact Statement that fully addresses all relevant issues and concerns. We fully support the Lead Agency moving forward in an expeditious manner with the preparation of the Draft EIS.

Thank you for the opportunity to comment on this important step in the process of this important project of major significance to the City of Utica, all of Oneida County and the entire region.

Sincerely,

John R. Kent, Jr.

John R. Kent, Jr.
Commissioner.

From: Brian Thomas
To: Steve Eckler; kbennett@bsk.com
Subject: FW: Downtown Hospital
Date: Monday, June 11, 2018 8:34:30 AM

Another SEQRA scoping written comment . . . . .

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
Utica, New York 13502
(315) 792-0181 phone
(315) 797-6607 fax

From: Stefan Rubitski [mailto:stefhmets@gmail.com]
Sent: Saturday, June 09, 2018 9:27 PM
To: Brian Thomas <bthomas@cityofutica.com>
Subject: Downtown Hospital

Hello this is Stefan Rubitski and a New Hospital is needed, if it is Downtown try to keep the History of that area of Utica as much as you can. Try to also look at West Utica the Corner of Noyes, York St where the State Hospital is as well. My email is stefhmets@gmail.com please keep in touch.

Stefan

From:	Brian Thomas
To:	Steve Eckler; kbennett@bsk.com
Cc:	Chris Lawrence
Subject:	FW: Proposed MVHS Health Campus
Date:	Wednesday, June 13, 2018 3:52:57 PM
Attachments:	FAA Comments on MVHS Proposal 6-11-18.pdf 150_5390_2c.pdf AC_135-14B.pdf VFRClassG.pdf 150_5190_4A Model Zoning.pdf

Steve and Kathleen-

Comments below and attached from the FAA.

Brian

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
Utica, New York 13502
(315) 792-0181 phone
(315) 797-6607 fax

From: David.Carlin@faa.gov [mailto:David.Carlin@faa.gov]
Sent: Monday, June 11, 2018 1:42 PM
To: Brian Thomas <bthomas@cityofutica.com>
Cc: evelyn.martinez@faa.gov; jonathan.delaune@faa.gov
Subject: Proposed MVHS Health Campus

Brian,

Thanks again for taking the time to speak with me today regarding MVHS Health Campus. As promised, here are comments and supporting documentation to consider as the City begins to map out the proposed development. If you have any questions, feel free to contact me anytime.

Dave

David Carlin, MPA

Community Planner
Federal Aviation Administration - NYADO
1 Aviation Plaza, Suite 111
Jamaica, NY 11434
Phone: (718) 995-5762
Email: david.carlin@faa.gov

U. S. Department
of Transportation

**Federal Aviation
Administration**

Federal Aviation Administration
New York Airports District Office
1 Aviation Plaza, Room 111
Jamaica, New York 11434

June 11, 2018

Mr. Brian Thomas, AICP
Commissioner
City of Utica Department of Urban an Economic Development
1 Kennedy Plaza
Utica, New York 13502

Re: Mohawk Valley Health System (MVHS) Integrated Health Campus

Dear Mr. Thomas,

Thank you for the opportunity to comment on the proposed hospital complex that will replace both St. Luke's and St. Elizabeth's hospitals in Utica, NY. Based on the material provided, a designated landing facility for helicopters will be included with the 670,000 sf complex located at the northeast corner of State and Columbia Street's. There are several aspects of this proposal that should be carefully evaluated as the City begins to plan this development.

The proposed helistop is located approximately 9.5 miles southeast of Griffiss International Airport (KRME) and just south of the final approach course to Runway 33. The proposed location would likely not pose any conflicts with arrivals, departures or traffic pattern operations given this distance from Griffiss. However, a formal review and analysis for any new helicopter facility should be submitted to the FAA using FAA Form 7480 (the form to establish landing facilities) so internal FAA lines of business can properly evaluate the proposal for potential impacts to the National Airspace System. Additionally, proposed structures (hospital, associated buildings, power poles, flag poles, antennas, trees etc.) should be submitted for review in conjunction with the established landing area to determine if there are any potential impacts on the proposed helistop via FAA Form 7460. There are no fees to conduct these reviews, and, the process can be initiated by submitting information online at: https://oeaaa.faa.gov/oeaaa/external/portal.jsp . It should be noted that the proposal should be submitted well in advance of planned construction, especially for newly established landing facilities. Although review times typically range from 45-60 days before a determination letter is issued on the proposed development, these times can be longer should impacts be identified and mitigation measures need to be determined. If you would like more information on this process, please contact me directly and I will provide additional

guidance.

Page three of the project description identifies that a helistop (i.e. minimally developed helicopter facility for boarding and discharging passengers or cargo, without the support facilities found at a heliport) will be situated to the west of the hospital building, adjacent to the ED ambulance entrance and north of Columbia Street. Although it is not clear what minimally developed means, the FAA has published guidance on how heliports, specifically hospital heliports, should be planned and designed. FAA Advisory Circular (AC) 150-5390/2C (attached) outlines the parameters that need to be considered when siting the facility and what infrastructure is needed. The AC does not use the term "helistop", as the design standards and recommendations of this AC apply to all heliports. Therefore, it is recommended that the reference to helistop be changed to Hospital Heliport for consistency with published guidance and standards.

Several aspects of this proposal warrant further review and include the following:

- The material provided in the MVHS application did not identify approach and departure surfaces to the proposed helipad to determine if the location is feasible based on planned and existing infrastructure. At a minimum, the approach and departure surfaces shall maintain an 8:1 slope without any obstructions as outlined in the attached guidance. Based on the proposed location, there may be additional noise and environmental impacts by using a surface landing area versus a rooftop or elevated setup given the existing Kennedy Tower residential apartment complex will immediately adjoin the MVHS complex. A noise analysis should be undertaken to verify what configuration will result in the least amount of noise to this residential area. Additionally, an assessment should me made with respect to air quality standards from exhaust that would be generated by helicopters to this residential property;
- It is unclear if the proposed helicopter area has been sited to account for prevailing winds as no data was submitted with the proposal. It should be noted that incorrectly siting the heliport with the hospitals planned ventilation system intakes can result in significant issues with building air quality if prevailing winds blow helicopter exhaust into them or to surrounding properties;
- The application material did not specify whether the area will be lighted for night operations, contain a rotating beacon on top of the MVHS facility, whether lighted windsocks or refueling infrastructure will be provided, etc. Please clarify if these types of improvements are anticipated;
- The MVHS application did not specify whether or not the facility will be designated as a trauma center, or will plan on providing trauma services at a future date. If trauma services will be provided, it will likely result in a greater frequency of helicopter operations to and from MVHS and therefore warrant improved infrastructure to serve the facility. Should a trauma center designation apply to MVHS, careful consideration should be given to the placing the heliport on the roof versus on the ground to minimize potential impacts.
- Details were not provided as to whether or not the proposed heliport will need instrument

approach procedures developed to allow helicopters to operate when weather is less than 2 miles and 800 feet ceilings, which are minimum weather requirements for Part 135 Air Ambulance operations (see attached VFR minimums). If MVHS plans to provide trauma services, it is recommended that instrument procedures be developed so as to minimize disruption of air transportation to and from the hospital during poor weather conditions. Requests for procedure development can be submitted at: https://www.faa.gov/air_traffic/flight_info/aeronav/procedures/ifp_form/ and should be submitted at least 18-24 months prior to expected operations.

- Given that a proposed heliport will be constructed at the MVHS site, the City of Utica should implement zoning regulations to limit buildings/objects around the site. Please review attached AC 150/5190-4, which illustrates how a Model Zoning Ordinance can be implemented to limit height of objects around airports (Substitute the heliport surfaces for the airport surfaces in the model ordinance). Should you have any questions regarding the development of zoning ordinances for airports/heliports, please contact me for further guidance.

Thank you for the opportunity to provide input on this proposal.

Sincerely,

Dave Carlin
Community Planner

Cc: Evelyn Martinez, NYADO
Zach Delaune, NYADO

U.S. Department of Transportation
Federal Aviation Administration

Advisory Circular

Subject:	Date:	AC No:
A MODEL ZONING ORDINANCE TO LIMIT HEIGHT OF OBJECTS AROUND AIRPORTS	12/14/87	150/5190-4A
	Initiated by: AAS-100	Change:

1. PURPOSE.

a. This advisory circular provides a model zoning ordinance to be used as a guide to control the height of objects around airports.

b. This advisory circular has been editorially updated for reprint/stock purposes only. There were no changes made to the content of the advisory circular except to update the format and renumber the document to AC 150/5190-4A.

2. CANCELLATION. AC 150/5190-4, A Model Zoning Ordinance to Limit Height of Objects Around Airports, dated August 23, 1977.

3. FOCUS.

a. Aviation safety requires a minimum clear space (or buffer) between operating aircraft and other objects. When these other objects are structures (such as buildings), the buffer may be achieved by limiting aircraft operations, by limiting the location and height of these objects, or, by a combination of these factors. This advisory circular concerns itself with developing zoning ordinances to control the height of objects, based on the obstruction surfaces described in Subpart C of Federal Aviation Regulations (FAR) Part 77, Objects Affecting Navigable Airspace, current edition. It should be recognized, however, that not all obstructions (objects whose height exceeds an obstruction surface) are a hazard to air navigation.

b. The Federal Aviation Administration (FAA) conducts aeronautical studies on obstructions which examine their effect on such factors as: aircraft operational capabilities; electronic and procedural requirements; and, airport hazard standards. If an aeronautical study shows that an obstruction, when evaluated against these factors, has no substantial adverse effect upon the safe and efficient use of navigable airspace, then the obstruction is considered not to be a hazard to air navigation. Advisory Circular 150/5300-4, Utility Airports--Air Access to National Transportation, current edition, presents additional discussion on hazards to air navigation.

c. Airport zoning ordinances developed for height limitations do not in themselves ensure compatible land use surrounding the airport. Land use zoning, incorporating height limiting criteria, is an appropriate means for achieving this objective. Advisory Circular 150/5050-6, Airport-Land Use Compatibility Planning, current edition, presents generalized guidance for compatible land use planning in the vicinity of airports.

4. BACKGROUND.

a. The purpose of zoning to limit the height of objects in the vicinity of airports is to prevent their interference with the safe and efficient operations of the airport.

b. Section 511 of the Airport and Airway Improvement Act of 1982, states, in part, the following: ". . . Sec. 511(a) SPONSORSHIP. As a condition precedent to approval of an airport development project contained in a project grant application submittted under this title, the Secretary shall receive assurances in writing, satisfactory to the Secretary that . . . (4) the aerial approaches to the airport will be adequately cleared and protected by removing, lowering, relocating, marking, or lighting or mitigating existing airport hazards and by preventing the establishment or creation of future airport hazards; (5) appropriate action, including the adoption of zoning laws has been or will be taken, to the extent reasonable, to restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations, including landing and takeoff aircraft; . . . ." Conformity with this advisory circular will assist the responsible local government in complying with the Section 511 assurances with respect to the height of objects. However, this advisory circular does not address other land use compatibility criteria, such as noise compatibility, which may be required under Section 511.

c. This advisory circular is based on the obstruction surfaces described in Subpart C of FAR Part 77. Examples of zoning ordinances for a utility airport and for a larger than utility airport have been included in appendices 2 and 3.

5. USE OF MODEL ZONING ORDINANCE.

a. Those responsible for drafting an airport zoning ordinance to limit height of objects are aware, of course, that it must conform to the prescribed authority of that particular airport zoning enabling act. Only terminology applicable to the airport named in the ordinance should be used.

b. The model ordinance included in this advisory circular defines and provides for the establishment of various zones and prescribes height limitations for each zone as required to prevent the creation or establishment of objects which would interfere with the operation of the airport. These zones will vary depending on the type, size, and layout of the runways. The model ordinance, therefore, leaves the specific zone measurements to be inserted by the political subdivision adopting the ordinance as appropriate for its particular airport.

c. The appendices also include examples of how the model ordinance may be used for various types of airports. Since much of the technical terminology and definitions are derived from Federal Aviation Regulations, technical procedural handbooks, and advisory circulars, care should be taken to ensure that language used in the ordinance drafted is consistent with terms used in the model ordinance.

d. Any height limitations imposed by a zoning ordinance must be "reasonable," meaning that the height limitations prescribed should not be so low at any point as to constitute a taking of property without compensations under local law. Therefore, the zoning ordinance should not purport to impose height limitations in any area so close to the ground that the application of criteria prescribed would result in unreasonable or unduly restrictive height limitations. This is provided for by provision 12, Excepted Height Limitations, of Section IV, Airport Zone Height Limitations, in the Model Zoning Ordinance.

e. The decision as to the excepted height limits should be made on the basis of local conditions and circumstances, including the uses being made of property in the vicinity of the airport. In making such a decision, the political subdivision should use the same procedures generally recognized as desirable in preparing comprehensive zoning ordinances, including necessary coordination with recognized state, regional, and local planning offices, where applicable.

f. Areas in the various zones where the height limitation is below the excepted height limit prescribed in the ordinance should be acquired to ensure the required protection. In the approach area, the minimum acquisition begins at the end of the primary surface defined in FAR Part 77, Section 77.25, and extends outward with the width of the approach surface defined in that section, to a point where the approach surface slope reaches a height of 50 feet above the ground elevation of the runway or terrain, whichever distance is the shorter. If easements are acquired, they should include the right of passage over the property by aircraft as well as the right to prevent creation of future obstructions.

g. Drafters of airport zoning ordinances should consult with Federal Aviation Administration (FAA) Airports personnel in regional or district offices when developing airport zoning regulations.

h. The standards contained in FAR Part 77, Subpart C, make it possible to determine, for any location on or adjacent to an airport, the height at which any structure or object of natural growth would constitute an obstruction. Section 77.13 of FAR Part 77, Subpart C sets forth the requirements for filing notice of proposed construction or alteration.

i. If the object exceeds a height or surface defined in Subpart C of FAR Part 77, it would be an obstruction and would be the subject of an aeronautical study by the FAA to determine its effect on navigable airspace. If the object is concluded to have a substantial adverse effect upon the safe and efficient utilization of such airspace, it would be determined to be a hazard to air navigation. The FAA cannot prevent its erection without local assistance. The enactment of this proposed model zoning ordinance will permit the local authorities to control the erection of hazards to air navigation and thus protect the community's investment in the airport.

j. The FAA aeronautical study will be made available to the local zoning authorities and will set forth the effects on aviation of any proposed object that would constitute an obstruction under Subpart C of FAR Part 77. This information can then be considered by the Board of Adjustment when processing applications for variances.

6. AIRPORT ZONING ORDINANCE MAP.

a. Attached to the airport zoning ordinance and made a part thereof is the airport zoning map. The airport zoning map is similar for all types of airports and heliports, and must be compiled from the criteria in Subpart C of FAR Part 77 as reflected in the Ordinance. A typical example of this zoning map was reduced in size for printing in this publication (see appendix 4).

b. The airport zoning map is of the area affected by the airport zoning ordinance and shows the layout of the runways, the airport boundaries, the airport elevation, and the area topography. The map should also set forth the various zones with the applicable height limitations for each as described in the body of the ordinance. The zoning map should contain a method of land identification, as typical in different areas of the country, such as section, township and range, block and lot, or metes and bounds. This map should also depict other identifying geographic objects such as streams, rivers, railroads, roads, and streets. By using a map with this amount of detail, in conjunction with the text of an ordinance, a property owner should, without undue difficulty, be able to determine not only the location of his property, but also the height limitations imposed thereon by the ordinance.

c. Adequate topographic maps may be available from local government sources. Standard topographic maps (quadrangle maps) are available from the U. S. Geological Survey. Maps should be ordered from the Distribution Branch, U. S. Geological Survey, P. O. Box 25286, Federal Center, Denver, Colorado 80225.

d. Many state agencies also make topographic maps available. In the absence of contour topographic data, land evaluation source data may be available from bench marks, railroads, highways, or local project surveys. Contour data on zoning maps should be shown to the extent reasonably available or required locally to support the ordinance.

7. BOARD OF ADJUSTMENT. The model ordinance provides for the creation of a Board of Adjustment to hear appeals, to hear and decide special exemptions, and to hear and decide special variances. Provision is also made for judicial review of decisions of the Board of Adjustment. Such review and appeal procedures are intended to conform to applicable constitutional requirements.

8. GENERAL INSTRUCTIONS FOR USING THE MODEL ZONING ORDINANCE.

a. The model zoning ordinance may be used as a guide for developing airport zoning ordinances to limit the height of objects that may interfere with the operation of a civil airport or heliport. The blank spaces should be filled in with appropriate data as noted.

b. It is not necessary that all material set forth in the model ordinance be used for all airport zoning ordinances. For example, if the airport to be zoned is a utility airport with no precision or nonprecision instrument runways existing or planned, those definitions and paragraphs referring to precision or nonprecision instrument runways or larger than utility runways may be omitted, (see appendix 2). However, if the airport changes to a larger than utility airport or receives instrument approach procedures, the ordinance should be amended to provide for the changes.

c. Section III should only include the airport zones applicable to the airport being zoned. An approach zone is applied to each end of each runway based upon the type of approach available or planned for that runway end. The most precise type of approach, existing or planned, for either end of the runway determines the primary surface width. Heliports do not have horizontal or conical zones. Other zones to accommodate the areas covered in FAR Par 77.23(a)(2) and (3) may be added.

d. Examples of several airport-type ordinances are included in the appendices for guidance.

Leonard E. Mudd

LEONARD E. MUDD
Director, Office of Airport Standards

APPENDIX 1. MODEL ZONING ORDINANCE TO LIMIT HEIGHT OF OBJECTS AROUND AN AIRPORT 1/

AN ORDINANCE REGULATING AND RESTRICTING THE HEIGHT OF STRUCTURES AND OBJECTS OF NATURAL GROWTH, AND OTHERWISE REGULATING THE USE OF PROPERTY, IN THE VICINITY OF THE _____ 2/ BY CREATING THE APPROPRIATE ZONES AND ESTABLISHING THE BOUNDARIES THEREOF; PROVIDING FOR CHANGES IN THE RESTRICTIONS AND BOUNDARIES OF SUCH ZONES; DEFINING CERTAIN TERMS USED HEREIN; REFERRING TO THE _____ 2/ ZONING MAP WHICH IS INCORPORATED IN AND MADE A PART OF THIS ORDINANCE; PROVIDING FOR ENFORCEMENT; ESTABLISHING A BOARD OF ADJUSTMENT; AND IMPOSING PENALTIES. 1/.

This Ordinance is adopted pursuant to the authority conferred by ____ 3/. It is hereby found that an obstruction has the potential for endangering the lives and property of users of ___ 2/, and property or occupants of land in its vicinity; that an obstruction may affect existing and future instrument approach minimums of ____ 2/; and that an obstruction may reduce the size of areas available for the landing, takeoff, and maneuvering of aircraft, thus tending to destroy or impair the utility of ___ 2/ and the public investment therein. Accordingly, it is declared:

(1) that the creation or establishment of an obstruction has the potential of being a public nuisance and may injure the region served by _____ 2/;

(2) that it is necessary in the interest of the public health, public safety, and general welfare _____ 4/ that the creation or establishment of obstructions that are a hazard to air navigation be prevented; and

(3) that the prevention of these obstructions should be accomplished, to the extent legally possible, by the exercise of the police power without compensation.

1/ This title should be written to meet the usages and legal requirements of your state, and the political subdivision.

2/ Insert the name of the airport being zoned by the Ordinance.

3/ This citation should be made to conform to the usual method of citing your state laws.

4/ If other terms are commonly used by the courts of your state in defining the limits of police power, such as "convenience" or "prosperity," they should be added here.

It is further declared that the prevention of the creation or establishment of hazards to air navigation, the elimination, removal, alteration or mitigation of hazards to air navigation, or the marking and lighting of obstructions are public purposes for which a political subdivision may raise and expend public funds and acquire land or interests in land.

IT IS HEREBY ORDAINED BY _____ 5/ as follows:

SECTION I: SHORT TITLE

This Ordinance shall be known and may be cited as ___ 2/ Zoning Ordinance.

SECTION II: DEFINITIONS

As used in this Ordinance, unless the context otherwise requires:

1. AIRPORT - _____ 2/.

2. AIRPORT ELEVATION - The highest point of an airport's usable landing area measured in feet from sea level.

3. APPROACH SURFACE - A surface longitudinally centered on the extended runway centerline, extending outward and upward from the end of the primary surface and at the same slope as the approach zone height limitation slope set forth in Section IV of this Ordinance. In plan the perimeter of the approach surface coincides with the perimeter of the approach zone.

4. APPROACH, TRANSITIONAL, HORIZONTAL, AND CONICAL ZONES - These zones are set forth in Section III of this Ordinance.

5. BOARD OF ADJUSTMENT - A Board consisting of _____ 6/ members appointed by the _____ 6/ as provided in _____ 6/.

6. CONICAL SURFACE - A surface extending outward and upward from the periphery of the horizontal surface at a slope of 20 to 1 for a horizontal distance of 4,000 feet.

7. HAZARD TO AIR NAVIGATION - An obstruction determined to have a substantial adverse effect on the safe and efficient utilization of the navigable airspace.

5/ A form of enacting clause commonly used by the political subdivision in adopting ordinances should be followed.

6/ Insert the number of members appointed to the Board of Adjustment, the appointing body, and the enabling legislation authorizing same.

8. HEIGHT - For the purpose of determining the height limits in all zones set forth in this Ordinance and shown on the zoning map, the datum shall be mean sea level elevation unless otherwise specified.

9. HELIPORT PRIMARY SURFACE - The area of the primary surface coincides in size and shape with the designated takeoff and landing area of a heliport. This surface is a horizontal plane at the elevation of the established heliport elevation.

10. HORIZONTAL SURFACE - A horizontal plane 150 feet above the established airport elevation, the perimeter of which in plan coincides with the perimeter of the horizontal zone.

11. LARGER THAN UTILITY RUNWAY - A runway that is constructed for and intended to be used by propeller driven aircraft of greater than 12,500 pounds maximum gross weight and jet powered aircraft.

12. NONCONFORMING USE - Any pre-existing structure, object of natural growth, or use of land which is inconsistent with the provisions of this Ordinance or an amendment thereto.

13. NONPRECISION INSTRUMENT RUNWAY - A runway having an existing instrument approach procedure utilizing air navigation facilities with only horizontal guidance, or area type navigation equipment, for which a straight-in nonprecision instrument approach procedure has been approved or planned.

14. OBSTRUCTION - Any structure, growth, or other object, including a mobile object, which exceeds a limiting height set forth in Section IV of this Ordinance.

15. PERSON - An individual, firm, partnership, corporation, company, association, joint stock association, or governmental entity; includes a trustee, a receiver, an assignee, or a similar representative of any of them.

16. PRECISION INSTRUMENT RUNWAY - A runway having an existing instrument approach procedure utilizing an Instrument Landing System (ILS) or a Precision Approach Radar (PAR). It also means a runway for which a precision approach system is planned and is so indicated on an approved airport layout plan or any other planning document.

17. PRIMARY SURFACE - A surface longitudinally centered on a runway. When the runway has a specially prepared hard surface, the primary surface extends 200 feet beyond each end of that runway; for military runways or when the runway has no specially prepared hard surface, or planned hard surface, the primary surface ends at each end of that runway. The width of the primary surface is set forth in Section III of this Ordinance. The elevation of any point on the primary surface

is the same as the elevation of the nearest point on the runway centerline.

18. RUNWAY - A defined area on an airport prepared for landing and take-off of aircraft along its length.

19. STRUCTURE - An object, including a mobile object, constructed or installed by man, including but without limitation, buildings, towers, cranes, smokestacks, earth formation, and overhead transmission lines.

20. TRANSITIONAL SURFACES - These surfaces extend outward at 90 degree angles to the runway centerline and the runway centerline extended at a slope of seven (7) feet horizontally for each foot vertically from the sides of the primary and approach surfaces to where they intersect the horizontal and conical surfaces. Transitional surfaces for those portions of the precision approach surfaces, which project through and beyond the limits of the conical surface, extend a distance of 5,000 feet measured horizontally from the edge of the approach surface and at 90 degree angles to the extended runway centerline.

21. TREE - Any object of natural growth.

22. UTILITY RUNWAY - A runway that is constructed for and intended to be used by propeller driven aircraft of 12,500 pounds maximum gross weight and less.

23. VISUAL RUNWAY - A runway intended solely for the operation of aircraft using visual approach procedures.

SECTION III: AIRPORT ZONES

In order to carry out the provisions of this Ordinance, there are hereby created and established certain zones which include all of the land lying beneath the approach surfaces, transitional surfaces, horizontal surfaces, and concical surfaces as they apply to ____ 2/. Such zones are shown on ____ 2/ Zoning map consisting of __ sheets, prepared by __, and dated __19__, which is attached to this Ordinance and made a part hereof. An area located in more than one (1) of the following zones is considered to be only in the zone with the more restrictive height limitation. The various zones are hereby established and defined as follows:

1. Utility Runway Visual Approach Zone - The inner edge of this approach zone coincides with the width of the primary surface and is ___ 7/ feet wide. The approach zone expands outward uniformly to a width of 1,250 feet at a horizontal distance of 5,000 feet from the primary surface. Its centerline is the continuation of the centerline of the runway.

7/ Insert dimension as set forth in FAR Part 77. Where more than one dimension is applicable, insert dimension identified to the appropriate runway involved.

2. Utility Runway Nonprecision Instrument Approach Zone - The inner edge of this approach zone coincides with the width of the primary surface and is 500 feet wide. The approach zone expands outward uniformly to a width of 2,000 feet at a horizontal distance 5,000 feet from the primary surface. Its centerline is the continuation of the centerline of the runway.

3. Runway Larger Than Utility Visual Approach Zone - The inner edge of this approach zone coincides with the width of the primary surface and is _____ 7/ feet wide. The approach zone expands outward uniformly to a width of 1,500 feet at a horizontal distance of 5,000 feet from the primary surface. Its centerline is the continuation of the centerline of the runway.

4. Runway Larger Than Utility With A Visibility Minimum Greater Than 3/4 Mile Nonprecision Instrument Approach Zone - The inner edge of this approach zone coincides with the width of the primary surface and is _____ 7/ feet wide. The approach zone expands outward uniformly to a width of 3,500 feet at a horizontal distance of 10,000 feet from the primary surface. Its centerline is the continuation of the centerline of the runway.

5. Runway Larger Than Utility With A Visibility Minimum As Low As 3/4 Mile Nonprecision Instrument Approach Zone - The inner edge of this approach zone coincides with the width of the primary surface and is 1,000 feet wide. The approach zone expands outward uniformly to a width of 4,000 feet at a horizontal distance of 10,000 feet from the primary surface. Its centerline is the continuation of the centerline of the runway.

6. Precision Instrument Runway Approach Zone - The inner edge of this approach zone coincides with the width of the primary surface and is 1,000 feet wide. The approach zone expands outward uniformly to a width of 16,000 feet at a horizontal distance of 50,000 feet from the primary surface. Its centerline is the continuation of the centerline of the runway.

7. Heliport Approach Zone - The inner edge of this approach zone coincides with the width of the primary surface and is ____ 8/ feet wide. The approach zone expands outward uniformly to a width of 500 feet at a horizontal distance of 4,000 feet from the primary surface.

8. Transitional Zones - The transitional zones are the areas beneath the transitional surfaces.

8/ The size of the heliport primary surface must be based on present and future heliport operations.

9. Heliport Transitional Zones - These zones extend outward from the sides of the primary surface and the heliport approach zones a horizontal distance of 250 feet from the primary surface centerline and the heliport approach zone centerline.

10. Horizontal Zone - The horizontal zone is established by swinging arcs of _____ 9/ feet radii from the center of each end of the primary surface of each runway and connecting the adjacent arcs by drawing lines tangent to those arcs. The horizontal zone does not include the approach and transitional zones.

11. Conical Zone - The conical zone is established as the area that commences at the periphery of the horizontal zone and extends outward therefrom a horizontal distance of 4,000 feet.

SECTION IV: AIRPORT ZONE HEIGHT LIMITATIONS

Except as otherwise provided in this Ordinance, no structure shall be erected, altered, or maintained, and no tree shall be allowed to grow in any zone created by this Ordinance to a height in excess of the applicable height limit herein established for such zone. Such applicable height limitations are hereby established for each of the zones in question as follows:

1. Utility Runway Visual Approach Zone - Slopes twenty (20) feet outward for each foot upward beginning at the end of and at the same elevation as the primary surface and extending to a horizontal distance of 5,000 feet along the extended runway centerline.

2. Utility Runway Nonprecision Instrument Approach Zone - Slopes twenty (20) feet outward for each foot upward beginning at the end of and at the same elevation as the primary surface and extending to a horizontal distance of 5,000 feet along the extended runway centerline.

3. Runway Larger Than Utility Visual Approach Zone - Slopes twenty (20) feet outward for each foot upward beginning at the end of and at the same elevation as the primary surface and extending to a horizontal distance of 5,000 feet along the extended runway centerline.

4. Runway Larger Than Utility With A Visibility Minimum Greater Than 3/4 Mile Nonprecision Instrument Approach Zone - Slopes thirty-four (34) feet outward for each foot upward beginning at the end of and at the same elevation as the primary surface and extending to a horizontal distance of 10,000 feet along the extended runway centerline.

9/ The radius of arc is:
   a) 5,000 feet for all runways designated utility or visual,
   b) 10,000 feet for all others.
The radius of the arcs for each end of the runway shall be the same. The radius used shall be the longest determined for either end.

5. Runway Larger Than Utility With A Visibility Minimum As Low As 3/4 Mile Nonprecision Instrument Approach Zone - Slopes thirty-four (34) feet outward for each foot upward beginning at the end of and at the same elevation as the primary surface and extending to a horizontal distance of 10,000 feet along the extended runway centerline.

6. Precision Instrument Runway Approach Zone - Slopes fifty (50) feet outward for each foot upward beginning at the end of and at the same elevation as the primary surface and extending to a horizontal distance of 10,000 feet along the extended runway centerline; thence slopes upward forty (40) feet horizontally for each foot vertically to an additional horizontal distance of 40,000 feet along the extended runway centerline.

7. Heliport Approach Zone - Slopes eight (8) feet outward for each foot upward beginning at the end of and at the same elevation as the primary surface and extending to a distance of 4,000 feet along the heliport approach zone centerline.

8. Transitional Zones - Slope seven (7) feet outward for each foot upward beginning at the sides of and at the same elevation as the primary surface and the approach surface, and extending to a height of 150 feet above the airport elevation which is ___ feet above mean sea level. In addition to the foregoing, there are established height limits sloping seven (7) feet outward for each foot upward beginning at the sides of and at the same elevation as the approach surface, and extending to where they intersect the conical surface. Where the precision instrument runway approach zone projects beyond the conical zone, there are established height limits sloping seven (7) feet outward for each foot upward beginning at the sides of and at the same elevation as the approach surface, and extending a horizontal distance of 5,000 feet measured at 90 degree angles to the extended runway centerline.

9. Heliport Transitional Zones - Slope two (2) feet outward for each foot upward beginning at the sides of and at the same elevation as the primary surface and the heliport approach zones and extending a distance of 250 feet measured horizontally from and at 90 degree angles to the primary surface centerline and heliport approach zones centerline.

10. Horizontal Zone - Established at 150 feet above the airport elevation or at a height of ___ feet above mean sea level.

11. Conical Zone - Slopes twenty (20) feet outward for each foot upward beginning at the periphery of the horizontal zone and at 150 feet above the airport elevation and extending to a height of 350 feet above the airport elevation.

12. Excepted Height Limitations - Nothing in this Ordinance shall be construed as prohibiting the construction or maintenance of any structure, or growth of any tree to a height up to _____ 10/ feet above the surface of the land.

SECTION V: USE RESTRICTIONS

Notwithstanding any other provisions of this Ordinance, no use may be made of land or water within any zone established by this Ordinance in such a manner as to create electrical interference with navigational signals or radio communication between the airport and aircraft, make it difficult for pilots to distinguish between airport lights and others, result in glare in the eyes of pilots using the airport, impair visibility in the vicinity of the airport, create bird strike hazards, or otherwise in any way endanger or interfere with the landing, takeoff, or maneuvering of aircraft intending to use the airport.

SECTION VI: NONCONFORMING USES

1. Regulations Not Retroactive - The regulations prescribed by this Ordinance shall not be construed to require the removal, lowering, or other change or alteration of any structure or tree not conforming to the regulations as of the effective date of this Ordinance, or otherwise interfere with the continuance of nonconforming use. Nothing contained herein shall require any change in the construction, alteration, or intended use of any structure, the construction or alteration of which was begun prior to the effective date of this Ordinance, and is diligently prosecuted.

2. Marking and Lighting - Notwithstanding the preceding provision of this Section, the owner of any existing nonconforming structure or tree is hereby required to permit the installation, operation, and maintenance thereon of such markers and lights as shall be deemed necessary by the ___ 11/ to indicate to the operators of aircraft in the vicinity of the airport the presence of such airport obstruction. Such markers and lights shall be installed, operated, and maintained at the expense of the ____ 12/.

10/ The adoption of height limits should be reasonable and based on land use considerations in the vicinity of the airport and the nature of the area to be zoned. The adoption of height limits should not be so low as to constitute a taking of private property without due process of law.

11/ Insert the title of the appropriate official who has been charged with the responsibility for determining the necessity for marking and lighting.

12/ Insert the name of the appropriate political body or subdivision.

SECTION VII: PERMITS

1. Future Uses - Except as specifically provided in a, b, and c hereunder, no material change shall be made in the use of land, no structure shall be erected or otherwise established, and no tree shall be planted in any zone hereby created unless a permit therefor shall have been applied for and granted. Each application for a permit shall indicate the purpose for which the permit is desired, with sufficient particularity to permit it to be determined whether the resulting use, structure, or tree would conform to the regulations herein prescribed. If such determination is in the affirmative, the permit shall be granted. No permit for a use inconsistent with the provisions of this Ordinance shall be granted unless a variance has been approved in accordance with Section VII, 4.

   a. In the area lying within the limits of the horizontal zone and conical zone, no permit shall be required for any tree or structure less than seventy-five feet of vertical height above the ground, except when, because of terrain, land contour, or topographic features, such tree or structure would extend above the height limits prescribed for such zones.

   b. In areas lying within the limits of the approach zones, but at a horizontal distance of not less than 4,200 feet from each end of the runway, no permit shall be required for any tree or structure less than seventy-five feet of vertical height above the ground, except when such tree or structure would extend above the height limit prescribed for such approach zones.

   c. In the areas lying within the limits of the transition zones beyond the perimeter of the horizontal zone, no permit shall be required for any tree or structure less than seventy-five feet of vertical height above the ground, except when such tree or structure, because of terrain, land contour, or topographic features, would extend above the height limit prescribed for such transition zones.

   Nothing contained in any of the foregoing exceptions shall be construed as permitting or intending to permit any construction, or alteration of any structure, or growth of any tree in excess of any of the height limits established by this Ordinance except as set forth in Section IV, 12.

2. Existing Uses - No permit shall be granted that would allow the establishment or creation of an obstruction or permit a nonconforming use, structure, or tree to become a greater hazard to air navigation than it was on the effective date of this Ordinance or any amendments thereto or than it is when the application for a permit is made. Except as indicated, all applications for such a permit shall be granted.

3. Nonconforming Uses Abandoned or Destroyed - Whenever the ___ 13/ determines that a nonconforming tree or structure has been abandoned or more than 80 percent torn down, physically deteriorated, or decayed, no permit shall be granted that would allow such structure or tree to exceed the applicable height limit or otherwise deviate from the zoning regulations.

4. Variances - Any person desiring to erect or increase the height of any structure, or permit the growth of any tree, or use property, not in accordance with the regulations prescribed in this Ordinance, may apply to the Board of Adjustment for a variance from such regulations. The application for variance shall be accompanied by a determination from the Federal Aviation Administration as to the effect of the proposal on the operation of air navigation facilities and the safe, efficient use of navigable airspace. Such variances shall be allowed where it is duly found that a literal application or enforcement of the regulations will result in unnecessary hardship and relief granted, will not be contrary to the public interest, will not create a hazard to air navigation, will do substantial justice, and will be in accordance with the spirit of this Ordinance. Additionally, no application for variance to the requirements of this Ordinance may be considered by the Board of Adjustment unless a copy of the application has been furnished to the ____ 14/ for advice as to the aeronautical effects of the variance. If the ____ 14/ does not respond to the application within fifteen (15) days after receipt, the Board of Adjustment may act on its own to grant or deny said application.

5. Obstruction Marking and Lighting - Any permit or variance granted may, if such action is deemed advisable to effectuate the purpose of this Ordinance and be reasonable in the circumstances, be so conditioned as to require the owner of the structure or tree in question to install, operate, and maintain, at the owner's expense, such markings and lights as may be necessary. If deemed proper by the Board of Adjustment, this condition may be modified to require the owner to permit the ____ 12/ at its own expense, to install, operate, and maintain the necessary markings and lights.

13/ Insert here the title of the appropriate official charged with making this determination.

14/ Insert here the official or body responsible for operation and maintenance of the airport to be zoned.

SECTION VIII: ENFORCEMENT

It shall be the duty of the ___ 15/ to administer and enforce the regulations prescribed herein. Applications for permits and variances shall be made to the ___ 15/ upon a form published for that purpose. Applications required by this Ordinance to be submitted to the ___ 15/ shall be promptly considered and granted or denied. Application for action by the Board of Adjustment shall be forthwith transmitted by the ___ 15/.

SECTION IX: BOARD OF ADJUSTMENT

1. There is hereby created a Board of Adjustment to have and exercise the following powers: (1) to hear and decide appeals from any order, requirement, decision, or determination made by the ___ 15/ in the enforcement of this Ordinance; (2) to hear and decide special exceptions to the terms of this Ordinance upon which such Board of Adjustment under such regulations may be required to pass; and (3) to hear and decide specific variances.

2. The Board of Adjustment shall consist of ___ members appointed by the ___ 12/ and each shall serve for a term of ___ years until a successor is duly appointed and qualified. Of the members first appointed, one shall be appointed for a term of ___ year, ___ for a term of ___ years, and ___ for a term of ___ years. Members shall be removable by the appointing authority for cause, upon written charges, after a public hearing.

3. The Board of Adjustment shall adopt rules for its governance and in harmony with the provisions of this Ordinance. Meetings of the Board of Adjustment shall be held at the call of the Chairperson and at such other times as the Board of Adjustment may determine. The Chairperson or, in the absence of the Chairperson, the Acting Chairperson may administer oaths and compel the attendance of witnesses. All hearings of the Board of Adjustment shall be public. The Board of Adjustment shall keep minutes of its proceedings showing the vote of each member upon each question; or if absent or failing to vote, indicating such fact, and shall keep records of its examinations and other official actions, all of which shall immediately be filed in the office of ___ 15/ and on due cause shown.

4. The Board of Adjustment shall make written findings of facts and conclusions of law giving the facts upon which it acted and its legal conclusions from such facts in reversing, affirming, or modifying any order, requirement, decision, or determination which comes before it under the provisions of this Ordinance.

15/ Insert here the title of the appropriate official, such as Director, Department of Public Works, etc.

5. The concurring vote of a majority of the members of the Board of Adjustment shall be sufficient to reverse any order, requirement, decision, or determination of the ___ 15/ or decide in favor of the applicant on any matter upon which it is required to pass under this Ordinance, or to effect variation to this Ordinance.

SECTION X: APPEALS

1. Any person aggrieved, or any taxpayer affected, by any decision of the ___ 15/ made in the administration of the Ordinance, may appeal to the Board of Adjustment.

2. All appeals hereunder must be taken within a reasonable time as provided by the rules of the Board of Adjustment, by filing with the ___ 15/ a notice of appeal specifying the grounds thereof. The _____ 15/ shall forthwith transmit to the Board of Adjustment all the papers constituting the record upon which the action appealed from was taken.

3. An appeal shall stay all proceedings in furtherance of the action appealed from unless the ___ 15/ certifies to the Board of Adjustment, after the notice of appeal has been filed with it, that by reason of the facts stated in the certificate a stay would in the opinion of _____ 15/ cause imminent peril to life or property. In such case, proceedings shall not be stayed except by the order of the Board of Adjustment on notice to the ___ 15/ and on due cause shown.

4. The Board of Adjustment shall fix a reasonable time for hearing appeals, give public notice and due notice to the parties in interest, and decide the same within a reasonable time. Upon the hearing, any party may appear in person or by agent or by attorney.

5. The Board of Adjustment may, in conformity with the provisions of this Ordinance, reverse or affirm, in whole or in part, or modify the order, requirement, decision, or determination appealed from and may make such order, requirement, decision, or determination as may be appropriate under the circumstances.

SECTION XI: JUDICIAL REVIEW

Any person aggrieved, or any taxpayer affected, by any decision of the Board of Adjustment, may appeal to the Court of ___ as provided in Section ____ of Chapter _____ of the Public Laws of ___ 16/.

16/ Insert the jurisdiction. Consideration should be given the desirability of setting forth this procedure here, or as an alternative attaching to all copies of this Ordinance, a copy of excerpts from the statute cited.

SECTION XII: PENALTIES

Each violation of this Ordinance or of any regulation, order, or ruling promulgated hereunder shall constitute a misdemeanor and shall be punishable by a fine of not more than ____ dollars or imprisonment for not more than ____ days or both; and each day a violation continues to exist shall constitute a separate offense.

SECTION XIII: CONFLICTING REGULATIONS

Where there exists a conflict between any of the regulations or limitations prescribed in this Ordinance and any other regulations applicable to the same area, whether the conflict be with respect to the height of structures or trees, and the use of land, or any other matter, the more stringent limitation or requirement shall govern and prevail.

SECTION XIV: SEVERABILITY

If any of the provisions of this Ordinance or the application thereof to any person or circumstances are held invalid, such invalidity shall not affect other provisions or applications of the Ordinance which can be given effect without the invalid provision or application, and to this end, the provisions of this Ordinance are declared to be severable.

SECTION XV: EFFECTIVE DATE

WHEREAS, the immediate operation of the provisions of this Ordinance is necessary for the preservation of the public health, public safety, and general welfare, an EMERGENCY is hereby declared to exist, and this Ordinance shall be in full force and effect from and after its passage by the ___ and publication and posting as required by law.
Adopted by the _____ this _____ day of _____, 19__.

APPENDIX 2. SAMPLE ORDINANCE FOR UTILITY-TYPE AIRPORT WITHOUT INSTRUMENT PROCEDURES

ZONING ORDINANCE TO LIMIT HEIGHT OF OBJECTS AROUND AIRVILLE AIRPORT

AN ORDINANCE REGULATING AND RESTRICTING THE HEIGHT OF STRUCTURES AND OBJECTS OF NATURAL GROWTH, AND OTHERWISE REGULATING THE USE OF PROPERTY, IN THE VICINITY OF THE AIRVILLE AIRPORT BY CREATING THE APPROPRIATE ZONES AND ESTABLISHING THE BOUNDARIES THEREOF; PROVIDING FOR CHANGES IN THE RESTRICTIONS AND BOUNDARIES OF SUCH ZONES; DEFINING CERTAIN TERMS USED HEREIN; REFERRING TO THE AIRVILLE AIRPORT ZONING MAP WHICH IS INCORPORATED IN AND MADE A PART OF THIS ORDINANCE; PROVIDING FOR ENFORCEMENT; ESTABLISHING A BOARD OF ADJUSTMENT; AND IMPOSING PENALTIES.

This Ordinance is adopted pursuant to the authority conferred by Chapter 333 of the Laws of the State of xxxxx. It is hereby found that an obstruction has the potential for endangering the lives and property of users of Airville Airport, and property or occupants of land in its vicinity; that an obstruction may affect existing and future instrument approach minimums of Airville Airport; and that an obstruction may reduce the size of areas available for the landing, takeoff, and maneuvering of aircraft, thus tending to destroy or impair the utility of Airville Airport and the public investment therein. Accordingly, it is declared:

(1) that the creation or establishment of an obstruction has the potential of being a public nuisance and may injure the region served by Airville Airport;

(2) that it is necessary in the interest of the public health, public safety, and general welfare that the creation or establishment of obstructions that are a hazard to air navigation be prevented; and

(3) that the prevention of these obstructions should be accomplished, to the extent legally possible, by the exercise of the police power without compensation.

It is further declared that the prevention of the creation or establishment of hazards to air navigation, the elimination, removal, alteration or mitigation of hazards to air navigation, or marking and lighting of obstructions are public purposes for which a political subdivision may raise and expend public funds and acquire land or interests in land.

IT IS HEREBY ORDAINED BY THE BOARD OF COUNTY COMMISSIONERS OF INDIAN COUNTY, XXXX, AS FOLLOWS:

SECTION I: SHORT TITLE

This Ordinance shall be known and may be cited as Airville Airport Zoning Ordinance.

SECTION II: DEFINITIONS

As used in this Ordinance, unless the context otherwise requires:

1. AIRPORT - Means Airville Airport.

2. AIRPORT ELEVATION - 100 feet above mean sea level.

3. APPROACH SURFACE - A surface longitudinally centered on the extended runway centerline, extending outward and upward from the end of the primary surface and at the same slope as the approach zone height limitation slope set forth in Section IV of this Ordinance. In plan the perimeter of the approach surface coincides with the perimeter of the approach zone.

4. APPROACH, TRANSITIONAL, HORIZONTAL, AND CONICAL ZONES - These zones are set forth in Section III of this Ordinance.

5. BOARD OF ADJUSTMENT - A board consisting of 3 members appointed by the Board of County Commissioners of Indian County as provided for in Chapter 33 of the Laws of the State of xxxxx.

6. CONICAL SURFACE - A surface extending outward and upward from the periphery of the horizontal surface at a slope of 20 to 1 for a horizontal distance of 4,000 feet.

7. HAZARD TO AIR NAVIGATION - An obstruction determined to have a substantial adverse effect on the safe and efficient utilization of the navigable airspace.

8. HEIGHT - For the purpose of determining the height limits in all zones set forth in this Ordinance and shown on the zoning map, the datum shall be mean sea level elevation unless otherwise specified.

9. HORIZONTAL SURFACE - A horizontal plane 150 feet above the established airport elevation, the perimeter of which in plan coincides with the perimeter of the horizontal zone.

10. NONCONFORMING USE - Any pre-existing structure, object of natural growth, or use of land which is inconsistent with the provisions of this Ordinance or an amendment thereto.

11. OBSTRUCTION - Any structure, growth, or other object, including a mobile object, which exceeds a limiting height set forth in Section IV of this Ordinance.

12. PERSON - An individual, firm, partnership, corporation, company, association, joint stock association, or governmental entity; includes a trustee, a receiver, an assignee, or a similar representative of any of them.

13. PRIMARY SURFACE - A surface longitudinally centered on a runway. When the runway has a specially prepared hard surface, the primary surface extends 200 feet beyond each end of that runway; when the runway has no specially prepared hard surface, or planned hard surface, the primary surface ends at each end of that runway. The width of the primary surface is set forth in Section III of this Ordinance. The elevation of any point on the primary surface is the same as the elevation of the nearest point on the runway centerline.

14. RUNWAY - A defined area on an airport prepared for landing and take-off of aircraft along its length.

15. STRUCTURE - An object, including a mobile object, constructed or installed by man, including but without limitation, buildings, towers, cranes, smokestacks, earth formation, and overhead transmission lines.

16. TRANSITIONAL SURFACES - These surfaces extend outward at 90 degree angles to the runway centerline and the runway centerline extended at a slope of seven (7) feet horizontally for each foot vertically from the sides of the primary and approach surfaces to where they intersect the horizontal and conical surfaces

17. TREE - Any object of natural growth.

18. UTILITY RUNWAY - A runway that is constructed for and intended to be used by propeller driven aircraft of 12,500 pounds maximum gross weight and less.

19. VISUAL RUNWAY - A runway intended solely for the operation of aircraft using visual approach procedures.

SECTION III: AIRPORT ZONES

In order to carry out the provisions of this Ordinance, there are hereby created and established certain zones which include all of the land lying beneath the approach surfaces, transitional surfaces, horizontal surfaces, and conical surfaces as they apply to the Airville Airport. Such zones are shown on the Airville Airport Zoning Map consisting of one sheet, prepared by the Department of Public Works and dated August 1, 1975, which

is attached to this Ordinance and made a part hereof. An area located in more than one (1) of the following zones is considered to be only in the zone with the more restrictive height limitation. The various zones are hereby established and defined as follows:

1. Utility Runway Visual Approach Zone - The inner edge of this approach zone coincides with the width of the primary surface and is 250 feet wide. The approach zone expands outward uniformly to a width of 1,250 feet at a horizontal distance of 5,000 feet from the primary surface. Its centerline is the continuation of the centerline of the runway.

2. Transitional Zones - The transitional zones are the areas beneath the transitional surfaces.

3. Horizontal Zone - The horizontal zone is established by swinging arcs of 5,000 feet radii from the center of each end of the primary surface of each runway and connecting the adjacent arcs by drawing lines tangent to those arcs. The horizontal zone does not include the approach and transitional zones.

4. Conical Zone - The conical zone is established as the area that commences at the periphery of the horizontal zone and extends outward therefrom a horizontal distance of 4,000 feet.

SECTION IV: AIRPORT ZONE HEIGHT LIMITATIONS

Except as otherwise provided in this Ordinance, no structure shall be erected, altered, or maintained, and no tree shall be allowed to grow in any zone created by this Ordinance to a height in excess of the applicable height limit herein established for such zone. Such applicable height limitations are hereby established for each of the zones in question as follows:

1. Utility Runway Visual Approach Zone - Slopes twenty (20) feet outward for each foot upward beginning at the end of and at the same elevation as the primary surface and extending to a horizontal distance of 5,000 feet along the extended runway centerline.

2. Transitional Zones - Slope seven (7) feet outward for each foot upward beginning at the sides of and at the same elevation as the primary surface and the approach surface, and extending to a height of 150 feet above the airport elevation which is 100 feet above mean sea level. In addition to the foregoing, there are established height limits sloping seven (7) feet outward for each foot upward beginning at the sides of and at the same elevation as the approach surface, and extending to where they intersect the conical surface.

3. Horizontal Zone - Established at 150 feet above the airport elevation or at a height of 250 feet above mean sea level.

4. Conical Zone - Slopes 20 feet outward for each foot upward beginning at the periphery of the horizontal zone and at 150 feet above the airport elevation and extending to a height of 350 feet above the airport elevation.

5. Excepted Height Limitations - Nothing in this Ordinance shall be construed as prohibiting the construction or maintenance of any structure, or growth of any tree to a height up to 50 feet above the surface of the land.

SECTION V: USE RESTRICTIONS

Notwithstanding any other provisions of this Ordinance, no use may be made of land or water within any zone established by this Ordinance in such a manner as to create electrical interference with navigational signals or radio communication between the airport and aircraft, make it difficult for pilots to distinguish between airport lights and others, result in glare in the eyes of pilots using the airport, impair visibility in the vicinity of the airport, create bird strike hazards, or otherwise in any way endanger or interfere with the landing, takeoff, or maneuvering of aircraft intending to use the airport.

SECTION VI: NONCONFORMING USES

1. Regulations Not Retroactive - The regulations prescribed by this Ordinance shall not be construed to require the removal, lowering, or other change or alteration of any structure or tree not conforming to the regulations as of the effective date of this Ordinance, or otherwise interfere with the continuance of a nonconforming use. Nothing contained herein shall require any change in the construction, alteration, or intended use of any structure, the construction or alteration of which was begun prior to the effective date of this Ordinance, and is diligently prosecuted.

2. Marking and Lighting - Notwithstanding the preceding provision of this Section, the owner of any existing nonconforming structure or tree is hereby required to permit the installation, operation, and maintenance thereon of such markers and lights as shall be deemed necessary by the Director, Department of Public Works, to indicate to the operators of aircraft in the vicinity of the airport the presence of such airport obstruction. Such markers and lights shall be installed, operated, and maintained at the expense of the Indian County Department of Public Works.

SECTION VII: PERMITS

1. Future Uses - Except as specifically provided in a, b, and c hereunder, no material change shall be made in the use of land, no structure shall be erected or otherwise established, and no tree shall be planted in any zone hereby created unless a permit therefor shall have been applied for

and granted. Each application for a permit shall indicate the purpose for which the permit is desired, with sufficient particularity to permit it to be determined whether the resulting use, structure, or tree would conform to the regulations herein prescribed. If such determination is in the affirmative, the permit shall be granted. No permit for a use inconsistent with the provisions of this Ordinance shall be granted unless a variance has been approved in accordance with Section VII, 4.

a. In the area lying within the limits of the horizontal zone and conical zone, no permit shall be required for any tree or structure less than seventy-five feet of vertical height above the ground, except when, because of terrain, land contour, or topographic features, such tree or structure would extend above the height limits prescribed for such zones.

b. In areas lying within the limits of the approach zones, but at a horizontal distance of not less than 4,200 feet from each end of the runway, no permit shall be required for any tree or structure less than seventy-five feet of vertical height above the ground, except when such tree or structure would extend above the height limit prescribed for such approach zones.

c. In the areas lying within the limits of the transition zones beyond the perimeter of the horizontal zone, no permit shall be required for any tree or structure less than seventy-five feet of vertical height above the ground, except when such tree or structure, because of terrain, land contour, or topographic features, would extend above.the height limit prescribed for such transition zones.

Nothing contained in any of the foregoing exceptions shall be construed as permitting or intending to permit any construction, or alteration of any structure, or growth of any tree in excess of any of the height limits established by this Ordinance except as set forth in Section IV,5.

2. Existing Uses - No permit shall be granted that would allow the establishment or creation of an obstruction or permit a nonconforming use, structure, or tree to become a greater hazard to air navigation than it was on the effective date of this Ordinance or any amendments thereto or than it is when the application for a permit is made. Except as indicated, all applications for such a permit shall be granted.

3. Nonconforming Uses Abandoned or Destroyed - Whenever the Director, Department of Public Works, determines that a nonconforming tree or structure has been abandoned or more than 80 percent torn down, physically deteriorated, or decayed, no permit shall be granted that would allow such structure or tree to exceed the applicable height limit or otherwise deviate from the zoning regulations.

4. Variances - Any person desiring to erect or increase the height of any structure, or permit the growth of any tree, or use property, not in accordance with the regulations prescribed in this Ordinance, may apply to the Board of Adjustment for a variance from such regulations. The application for variance shall be accompanied by a determination from the Federal Aviation Administration as to the effect of the proposal on the operation of air navigation facilities and the safe, efficient use of navigable airspace. Such variances shall be allowed where it is duly found that a literal application or enforcement of the regulations will result in unnecessary hardship and relief granted, will not be contrary to the public interest, will not create a hazard to air navigation, will do substantial justice, and will be in accordance with the spirit of this Ordinance. Additionally, no application for variance to the requirements of this Ordinance may be considered by the Board of Adjustment unless a copy of the application has been furnished to the Airport Manager for advice as to the aeronautical effects of the variance. If the Airport Manager does not respond to the application within 15 days after receipt, the Board of Adjustment may act on its own to grant or deny said application.

5. Obstruction Marking and Lighting - Any permit or variance granted may, if such action is deemed advisable to effectuate the purpose of this Ordinance and be reasonable in the circumstances, be so conditioned as to require the owner of the structure or tree in question to install, operate, and maintain, at the owner's expense, such markings and lights as may be necessary. If deemed proper by the Board of Adjustment, this condition may be modified to require the owner to permit the Indian County Department of Public Works, at its own expense, to install, operate, and maintain the necessary markings and lights.

SECTION VIII: ENFORCEMENT

It shall be the duty of the Director, Department of Public Works, to administer and enforce the regulations prescribed herein. Applications for permits and variances shall be made to the Director, Department of Public Works upon a form published for that purpose. Applications required by this Ordinance to be submitted to the Director, Department of Public Works, shall be promptly considered and granted or denied. Application for action by the Board of Adjustment shall be forthwith transmitted by the Director, Department of Public Works.

SECTION IX: BOARD OF ADJUSTMENT

1. There is hereby created a Board of Adjustment to have and exercise the following powers: (1) to hear and decide appeals from any order, requirement, decision, or determination made by the Director, Department of Public Works, in the enforcement of this Ordinance; (2) to hear and decide special exceptions to the terms of this Ordinance upon which such Board of Adjustment under such regulations may be required to pass; and (3) to hear and decide specific variances.

2. The Board of Adjustment shall consist of three members appointed by the Board of County Commissioners and each shall serve for a term of three years until a successor is duly appointed and qualified. Of the members first appointed, one shall be appointed for a term of one year, one for a term of two years, and one for a term of three years. Members shall be removable by the appointing authority for cause, upon written charges, after a public hearing.

3. The Board of Adjustment shall adopt rules for its governance and in harmony with the provisions of this Ordinance. Meetings of the Board of Adjustment shall be held at the call of the Chairperson and at such other times as the Board of Adjustment may determine. The Chairperson or, in the absence of the Chairperson, the Acting Chairperson may administer oaths and compel the attendance of witnesses. All hearings of the Board of Adjustment shall be public. The Board of Adjustment shall keep minutes of its proceedings showing the vote of each member upon each question; or if absent or failing to vote, indicating such fact, and shall keep records of its examinations and other official action, all of which shall immediately be filed in the office of County Clerk and on due cause shown.

4. The Board of Adjustment shall make written findings of facts and conclusions of law giving the facts upon which it acted and its legal conclusions from such facts in reversing, affirming, or modifying any order, requirement, decision, or determination which comes before it under the provisions of this Ordinance.

5. The concurring vote of a majority of the members of the Board of Adjustment shall be sufficient to reverse any order, requirement, decision, or determination of the Director, Department of Public Works, or to decide in favor of the applicant on any matter upon which it is required to pass under this Ordinance, or to effect variation to this Ordinance.

SECTION X: APPEALS

1. Any person aggrieved, or any taxpayer affected, by any decision of the Director, Department of Public Works, made in the administration of the Ordinance, may appeal to the Board of Adjustment.

2. All appeals hereunder must be taken within a reasonable time as provided by the rules of the Board of Adjustment, by filing with the Director, Department of Public Works, a notice of appeal specifying the grounds thereof. The Director, Department of Public Works, shall forthwith transmit to the Board of Adjustment all the papers constituting the record upon which the action appealed from was taken.

3. An appeal shall stay all proceedings in furtherance of the action appealed from unless the Director, Department of Public Works, certifies to the Board of Adjustment, after the notice of appeal has been filed with it, that by reason of the facts stated in the certificate a stay

would in the opinion of the Director, Department of Public Works cause imminent peril to life or property. In such case, proceedings shall not be stayed except by order of the Board of Adjustment or notice to the Director, Department of Public Works, and on due cause shown.

4. The Board of Adjustment shall fix a reasonable time for hearing appeals, give public notice and due notice to the parties in interest, and decide the same within a reasonable time. Upon the hearing, any party may appear in person or by agent or by attorney.

5. The Board of Adjustment may, in conformity with the provisions of this Ordinance, reverse or affirm, in whole or in part, or modify the order, requirement, decision, or determination appealed from and may make such order, requirement, decision, or determination as may be appropriate under the circumstances.

SECTION XI: JUDICIAL REVIEW

Any person aggrieved, or any taxpayer affected, by any decision of the Board of Adjustment, may appeal to the Circuit Court as provided in Section 333.111 of Chapter 333 of the Public Laws of the State of xxxxx.

SECTION XII: PENALTIES

Each violation of this Ordinance or of any regulation, order, or ruling promulgated hereunder shall constitute a misdemeanor and be punishable by a fine of not more than 500 dollars or imprisonment for not more than 180 days or both; and each day a violation continues to exist shall constitute a separate offense.

SECTION XIII: CONFLICTING REGULATIONS

Where there exists a conflict between any of the regulations or limitations prescribed in this Ordinance and any other regulations applicable to the same area, whether the conflict be with respect to the height of structures or trees, and the use of land, or any other matter, the more stringent limitation or requirement shall govern and prevail.

SECTION XIV: SEVERABILITY

If any of the provisions of this Ordinance or the application thereof to any person or circumstances are held invalid, such invalidity shall not affect other provisions or applications of the Ordinance which can be given effect without the invalid provision or application, and to this end, the provisions of this Ordinance are declared to be severable.

SECTION XV: EFFECTIVE DATE

WHEREAS, the immediate operation of the provisions of this Ordinance is necessary for the preservation of the public health, public safety, and general welfare, an EMERGENCY is hereby declared to exist, and this Ordinance shall be in full force and effect from and after its passage by the Indian County Board of Commissioners and publication and posting as required by law. Adopted by the Indian County Board of Commissioners this 12th day of October, 1975.

APPENDIX 3. SAMPLE ORDINANCE FOR LARGER THAN UTILITY TYPE AIRPORT WITH INSTRUMENT APPROACHES

ZONING ORDINANCE TO LIMIT HEIGHT OF OBJECTS AROUND AIRVILLE AIRPORT

AN ORDINANCE REGULATING AND RESTRICTING THE HEIGHT OF STRUCTURES AND OBJECTS OF NATURAL GROWTH, AND OTHERWISE REGULATING THE USE OF PROPERTY, IN THE VICINITY OF THE AIRVILLE AIRPORT BY CREATING THE APPROPRIATE ZONES AND ESTABLISHING THE BOUNDARIES THEREOF; PROVIDING FOR CHANGES IN THE RESTRICTIONS AND BOUNDARIES OF SUCH ZONES; DEFINING CERTAIN TERMS USED HEREIN; REFERRING TO THE AIRVILLE AIRPORT ZONING MAP WHICH IS INCORPORATED IN AND MADE A PART OF THIS ORDINANCE; PROVIDING FOR ENFORCEMENT; ESTABLISHING A BOARD OF ADJUSTMENT; AND IMPOSING PENALTIES.

This Ordinance is adopted pursuant to the authority conferred by Chapter 49 of Statutes of the State of xxxxx. It is hereby found that an obstruction has the potential for endangering the lives and property of users of Airville Airport, and property or occupants of land in its vicinity; that an obstuction may affect existing and future instrument approach minimums of Airville Airport; and that an obstruction may reduce the size of areas available for the landing, takeoff, and maneuvering of aircraft, thus tending to destroy or impair the utility of Airville Airport and the public investment therein. Accordingly, it is declared:

(1) that the creation or establishment of an obstruction has the potential of being a public nuisance and may injure the region served by Airville Airport;

(2) that it is necessary in the interest of the public health, public safety, and general welfare that the creation or establishment of obstructions that are a hazard to air navigation be prevented; and

(3) that the prevention of these obstructions should be accomplished, to the extent legally possible, by the exercise of the police power without compensation.

It is further declared that the prevention of the creation or establishment of hazards to air navigation, the elimination, removal, alteration or mitigation of hazards to air navigation, or marking and lighting of obstructions are public purposes for which a political subdivision may raise and expend public funds and acquire land or interests in land.

IT IS HEREBY ORDAINED BY THE CITY COUNCIL OR AIRVILLE, XXXXX, AS FOLLOWS:

SECTION I: SHORT TITLE

This Ordinance shall be known and may be cited as Airville Airport Zoning Ordinance.

SECTION II: DEFINITIONS

As used in this Ordinance, unless the context otherwise requires:

1. AIRPORT - Means Airville Airport.

2. AIRPORT ELEVATION - 100 feet above mean sea level.

3. APPROACH SURFACE - A surface longitudinally centered on the extended runway centerline, extending outward and upward from the end of the primary surface and at the same slope as the approach zone height limitation slope set forth in Section IV of this Ordinance. In plan the perimeter of the approach surface coincides with the perimeter of the approach zone.

4. APPROACH, TRANSITIONAL, HORIZONTAL, AND CONICAL ZONES - These zones are set forth in Section III of this Ordinance.

5. BOARD OF ADJUSTMENT - A board consisting of 3 members appointed by the City Council as provided in Chapter 12 of the Laws of the State of xxxxx.

6. CONICAL SURFACE - A surface extending outward and upward from the periphery of the horizontal surface at a slope of 20 to 1 for a horizontal distance of 4,000 feet.

7. HAZARD TO AIR NAVIGATION - An obstruction determined to have a substantial adverse effect on the safe and efficient utilization of the navigable airspace.

8. HEIGHT - For the purpose of determining the height limits in all zones set forth in this Ordinance and shown on the zoning map, the datum shall be mean sea level elevation unless otherwise specified.

9. HORIZONTAL SURFACE - A horizontal plane 150 feet above the established airport elevation, the perimeter of which in plan coincides with the perimeter of the horizontal zone.

10. LARGER THAN UTILITY RUNWAY - A runway that is constructed for and intended to be used by propeller driven aircraft of greater than 12,500 pounds maximum gross weight and jet powered aircraft.

11. NONCONFORMING USE - Any pre-existing structure, object of natural growth, or use of land which is inconsistent with the provisions of this Ordinance or an amendment thereto.

12. NONPRECISION INSTRUMENT RUNWAY - A runway having an existing instrument approach procedure utilizing air navigation facilities with only horizontal guidance, or area type navigation equipment, for which a straight-in nonprecision instrument approach procedure has been approved or planned.

13. OBSTRUCTION - Any structure, growth, or other object, including a mobile object, which exceeds a limiting height set forth in Section IV of this Ordinance.

14. PERSON - An individual, firm, partnership, corporation, company, association, joint stock association or government entity; includes a trustee, a receiver, an assignee, or a similar representative of any of them.

15. PRECISION INSTRUMENT RUNWAY - A runway having an existing instrument approach procedure utilizing an Instrument Landing System (ILS) or a Precision Approach Radar (PAR). It also means a runway for which a precision approach system is planned and is so indicated on an approved airport layout plan or any other planning document.

16. PRIMARY SURFACE - A surface longitudinally centered on a runway. When the runway has a specially prepared hard surface, the primary surface extends 200 feet beyond each end of that runway; for military runways or when the runway has no specially prepared hard surface, or planned hard surface, the primary surface ends at each end of that runway. The width of the primary surface is set forth in Section III of this Ordinance. The elevation of any point on the primary surface is the same as the elevation of the nearest point on the runway centerline.

17. RUNWAY - A defined area on an airport prepared for landing and take-off of aircraft along its length.

18. STRUCTURE - An object, including a mobile object, constructed or installed by man, including but without limitation, buildings, towers, cranes, smokestacks, earth formation, and overhead transmission lines.

19. TRANSITIONAL SURFACES - These surfaces extend outward at 90 degree angles to the runway centerline and the runway centerline extended at a slope of seven (7) feet horizontally for each foot vertically from the sides of the primary and approach surfaces to where they intersect the horizontal and conical surfaces. Transitional surfaces for those portions of the precision approach surfaces, which project through and beyond the limits of the conical surface, extend a distance of 5,000 feet measured horizontally from the edge of the approach surface and at 90 degree angles to the extended runway centerline.

20. TREE - Any object of natural growth.

21. UTILITY RUNWAY - A runway that is constructed for and intended to be used by propeller driven aircraft of 12,500 pounds maximum gross weight and less.

22. VISUAL RUNWAY - A runway intended solely for the operation of aircraft using visual approach procedures.

SECTION III: AIRPORT ZONES

In order to carry out the provisions of this Ordinance, there are hereby created and established certain zones which include all of the land lying beneath the approach surfaces, transitional surfaces, horizontal surfaces, and conical surfaces as they apply to Airville Airport. Such zones are shown on Airville Airport Zoning Map consisting of one sheet, prepared by the Department of Public Works, dated September 1, 1975, which is attached to this Ordinance and made a part hereof. An area located in more than one of the following zones is considered to be only in the zone with the more restrictive height limitation. The various zones are hereby established and defined as follows:

1. Utility Runway Visual Approach Zone - The inner edge of this approach zone coincides with the width of the primary surface and is 250 feet wide. The approach zone expands outward uniformly to a width of 1,250 feet at a horizontal distance of 5,000 feet from the primary surface. Its centerline is the continuation of the centerline of the runway.

2. Utility Runway Nonprecision Instrument Approach Zone - The inner edge of this approach zone coincides with the width of the primary surface and is 500 feet wide. The approach zone expands outward uniformly to a width of 2,000 feet at a horizontal distance 5,000 feet from the primary surface. Its centerline is the continuation of the centerline of the runway.

3. Runway Larger Than Utility Visual Approach Zone - The inner edge of this approach zone coincides with the width of the primary surface and is 500 feet wide. The approach zone expands outward uniformly to a width of 1,500 feet at a horizontal distance of 5,000 feet from the primary surface. Its centerline is the continuation of the centerline of the runway.

4. Runway Larger Than Utility With A Visibility Minimum Greater Than 3/4 Mile Nonprecision Instrument Approach Zone - The inner edge of this approach zone coincides with the width of the primary surface and is 500 feet wide. The approach zone expands outward uniformly to a width of 3,500 feet at a horizontal distance of 10,000 feet from the primary surface. Its centerline is the continuation of the centerline of the runway.

5. Runway Larger Than Utility With A Visibility Minimum As Low As 3/4 Mile Nonprecision Instrument Approach Zone - The inner edge of this approach zone coincides with the width of the primary surface and is 1,000 feet wide. The approach zone expands outward uniformly to a width of 4,000 feet at a horizontal distance of 10,000 feet from the primary surface. Its centerline is the continuation of the centerline of the runway.

6. Precision Instrument Runway Approach Zone - The inner edge of this approach zone coincides with the width of the primary surface and is 1,000 feet wide. The approach zone expands outward uniformly to a width of 16,000 feet at a horizontal distance of 50,000 feet from the primary surface. Its centerline is the continuation of the centerline of the runway.

7. Transitional Zones - The transitional zones are the areas beneath the transitional surfaces.

8. Horizontal Zone - The horizontal zone is established by swinging arcs of 5,000 feet radii for all runways designated utility or visual and 10,000 feet for all others from the center of each end of the primary surface of each runway and connecting the adjacent arcs by drawing lines tangent to those arcs. The horizontal zone does not include the approach and transitional zones.

9. Conical Zone - The conical zone is established as the area that commences at the periphery of the horizontal zone and extends outward therefrom a horizontal distance of 4,000 feet.

SECTION IV: AIRPORT ZONE HEIGHT LIMITATIONS

Except as otherwise provided in this Ordinance, no structure shall be erected, altered, or maintained, and no tree shall be allowed to grow in any zone created by this Ordinance to a height in excess of the applicable height herein established for such zone. Such applicable height limitations are hereby established for each of the zones in question as follows:

1. Utility Runway Visual Approach Zone - Slopes twenty (20) feet outward for each foot upward beginning at the end of and at the same elevation as the primary surface and extending to a horizontal distance of 5,000 feet along the extended runway centerline.

2. Utility Runway Nonprecision Instrument Approach Zone - Slopes twenty (20) feet outward for each foot upward beginning at the end of and at the same elevation as the primary surface and extending to a horizontal distance of 5,000 feet along the extended runway centerline.

3. Runway Larger Than Utility Visual Approach Zone - Slopes twenty (20) feet outward for each foot upward beginning at the end of and at the same elevation as the primary surface and extending to a horizontal distance of 5,000 feet along the extended runway centerline.

4. Runway Larger Than Utility With A Visibility Minimum Greater Than 3/4 Mile Nonprecision Instrument Approach Zone - Slopes thirty-four (34) feet outward for each foot upward beginning at the end of and at the same elevation as the primary surface and extending to a horizontal distance of 10,000 feet along the extended runway centerline.

5. Runway Larger Than Utility With A Visibility Minimum As Low As 3/4 Mile Nonprecision Instrument Approach Zone - Slopes thirty-four (34) feet outward for each foot upward beginning at the end of and at the same elevation as the primary surface and extending to a horizontal distance of 10,000 feet along the extended runway centerline.

6. Precision Instrument Runway Approach Zone - Slopes fifty (50) feet outward for each foot upward beginning at the end of and at the same elevation as the primary surface and extending to a horizontal distance of 10,000 feet along the extended runway centerline; thence slopes upward forty (40) feet horizontally for each foot vertically to an additional horizontal distance of 40,000 feet along the extended runway centerline.

7. Transitional Zones - Slope seven (7) feet outward for each foot upward beginning at the sides of and at the same elevation as the primary surface and the approach surface, and extending to a height of 150 feet above the airport elevation which is 100 feet above mean sea level. In addition to the foregoing, there are established height limits sloping seven (7) feet outward for each foot upward beginning at the sides of and the same elevation as the approach surface, and extending to where they intersect the conical surface. Where the precision instrument runway approach zone projects beyond the conical zone, there are established height limits sloping seven (7) feet outward for each foot upward beginning at the sides of and the same elevation as the approach surface, and extending a horizontal distance of 5,000 feet measured at 90 degree angles to the extended runway centerline.

8. Horizontal Zone - Established at 150 feet above the airport elevation or at a height of 250 feet above mean sea level.

9. Conical Zone - Slopes twenty (20) feet outward for each foot upward beginning at the periphery of the horizontal zone and at 150 feet above the airport elevation and extending to a height of 350 feet above the airport elevation.

10. Excepted Height Limitations - Nothing in this Ordinance shall be construed as prohibiting the construction or maintenance of any structure, or growth of any tree to a height up to 50 feet above the surface of the land.

SECTION V: USE RESTRICTION

Notwithstanding any other provisions of this Ordinance, no use may be made of land or water within any zone established by this Ordinance in such a manner as to create electrical interference with navigational signals or radio communication between the airport and aircraft, make it difficult for pilots to distinguish between airport lights and others, result in glare in the eyes of pilots using the airport, impair visibility in the vicinity of the airport, create bird strike hazards, or otherwise in any way endanger or interfere with the landing, takeoff, or maneuvering of aircraft intending to use the airport.

SECTION VI: NONCONFORMING USES

1. Regulations Not Retroactive - The regulations prescribed in this Ordinance shall not be construed to require the removal, lowering, or other change or alteration of any structure or tree not conforming to the regulations as the effective date of this Ordinance, or otherwise interfere with the continuance of a nonconforming use. Nothing contained herein shall require any change in the construction, alteration, or intended use of any structure, the construction or alteration of which was begun prior to the effective date of this Ordinance, and is diligently prosecuted.

2. Marking and Lighting - Notwithstanding the preceding provision of this Section, the owner of any existing nonconforming structure or tree is hereby required to permit the installation, operation, and maintenance thereon of such markers and lights as shall be deemed necessary by the City Manager to indicate to the operators of aircraft in the vicinity of the airport the presence of such airport obstruction. Such markers and lights shall be installed, operated, and maintained at the expense of the City of Airville.

SECTION VII: PERMITS

1. Future Uses - Except as specifically provided in a, b, and c hereunder, no material change shall be made in the use of land, no structure shall be erected or otherwise established, and no tree shall be planted in any zone hereby created unless a permit therefor shall have been applied for and granted. Each application for a permit shall indicate the purpose for which the permit is desired, with sufficient particularity to permit it to be determined whether the resulting use, structure, or tree would conform to the regulations herein prescribed. If such determination is in the affirmative, the permit shall be granted. No permit for a use inconsistent with the provisions of this ordinance shall be granted unless a variance has been approved in accordance with Section VII, 4.

a. In the area lying within the limits of the horizontal zone and conical zone, no permit shall be required for any tree or structure less than seventy-five feet of vertical height above the ground, except when, because of terrain, land contour, or topographic features, such tree or structure would extend above the height limits prescribed for such zones.

b. In areas lying within the limits of the approach zones but at a horizontal distance of not less than 4,200 feet from each end of the runway, no permit shall be required for any tree or structure less than seventy-five feet of vertical height above the ground, except when such tree or structure would extend above the height limit prescribed for such approach zones.

c. In the areas lying within the limits of the transition zones beyond the perimeter of the horizontal zone, no permit shall be required for any tree or structure less than seventy-five feet of vertical height above the ground, except when such tree or structure, because of terrain, land contour, or topographic features, would extend above the height limit prescribed for such transition zones.

Nothing contained in any of the foregoing exceptions shall be construed as permitting or intending to permit any construction, or alteration of any structure, or growth of any tree in excess of any of the height limits established by this Ordinance except as set forth in Section IV, 10.

2. Existing Uses - No permit shall be granted that would allow the establishment or creation of an obstruction or permit a nonconforming use, structure, or tree to become a greater hazard to air navigation, than it was on the effective date of this Ordinance or any amendments thereto or than it is when the application for a permit is made. Except as indicated, all applications for such a permit shall be granted.

3. Nonconforming Uses Abandoned or Destroyed - Whenever the City Manager determines that a nonconforming tree or structure has been abandoned or more than 80 percent torn down, physically deteriorated, or decayed, no permit shall be granted that would allow such structure or tree to exceed the applicable height limit or otherwise deviate from the zoning regulations.

4. Variances - Any person desiring to erect or increase the height of any structure, or permit the growth of any tree, or use property, not in accordance with the regulations prescribed in this Ordinance, may apply to the Board of Adjustment for a variance from such regulations. The application for variance shall be accompanied by a determination from the Federal Aviation Administration as to the effect of the proposal on the operation of air navigation facilities and the safe, efficient use of navigable airspace. Such variances shall be allowed where it is dully found that a literal application or enforcement of the regulations will

result in unnecessary hardship and relief granted, will not be contrary to the public interest, will not create a hazard to air navigation, will do substantial justice, and will be in accordance with the spirit of this Ordinance. Additionally, no application for variance to the requirements of this Ordinance may be considered by the Board of Adjustment unless a copy of the application has been furnished to the Airport Manager for advice as to the aeronautical effects of the variance. If the Airport Manager does not respond to the application within 15 days after receipt, the Board of Adjustment may act on its own to grant or deny said application.

5. Obstruction Marking and Lighting - Any permit or variance granted may, if such action is deemed advisable to effectuate the purpose of this Ordinance and be reasonable in the circumstances, be so conditioned as to require the owner of the structure or tree in question to install, operate, and maintain, at the owner's expense, such markings and lights as may be necessary. If deemed proper by the Board of Adjustment, this condition may be modified to require the owner to permit the City of Airville, at its own expense, to install, operate, and maintain the necessary markings and lights.

SECTION VIII: ENFORCEMENT

It shall be the duty of the City Manager to administer and enforce the regulations prescribed herein. Applications for permits and variances shall be made to the City Manager upon a form published for that purpose. Applications required by this Ordinance to be submitted to the City Manager shall be promptly considered and granted or denied. Application for action by the Board of Adjustment shall be forthwith transmitted by the City Manager.

SECTION IX: BOARD OF ADJUSTMENT

1. There is hereby created a Board of Adjustment to have and exercise the following powers: (1) to hear and decide appeals from any order, requirement, decision, or determination made by the City Manager in the enforcement of this Ordinance; (2) to hear and decide special exceptions to the terms of this Ordinance upon which such Board of Adjustment under such regulations may be required to pass; and (3) to hear and decide specific variances.

2. The Board of Adjustment shall consist of three members appointed by the City Council and each shall serve for a term of three years until a successor is duly appointed and qualified. Of the members first appointed, one shall be appointed for a term of one year, one for a term of two years, and one for a term of three years. Members shall be removable by the appointing authority for cause, upon written charges, after a public hearing.

3. The Board of Adjustment shall adopt rules for its governance and in harmony with the provisions of this Ordinance. Meetings of the Board of Adjustment shall be held at the call of the Chairperson and at such other times as the Board of Adjustment may determine. The Chairperson or, in the absence of the Chairperson, the Acting Chairperson may administer oaths and compel the attendance of witnesses. All hearings of the Board of Adjustment shall be public. The Board of Adjustment shall keep minutes of its proceedings showing the vote of each member upon each question; or if absent or failing to vote, indicating such fact, and shall keep records of its examinations and other official actions, all of which shall immediately be filed in the office of the City Clerk and on due cause shown.

4. The Board of Adjustment shall make written findings of facts and conclusions of law giving the facts upon which it acted and its legal conclusions from such facts in reversing, affirming, or modifying any order, requirement, decision, or determination which comes before it under the provisions of this Ordinance.

5. The concurring vote of a majority of the members of the Board of Adjustment shall be sufficient to reverse any order, requirement, decision, or determination of the City Manager or decide in favor of the applicant on any matter upon which it is required to pass under this Ordinance, or to effect variation to this Ordinance.

SECTION X: APPEALS

1. Any person aggrieved, or any taxpayer affected, by any decision of the City Manager, made in the administration of the Ordinance, may appeal to the Board of Adjustment.

2. All appeals hereunder must be taken within a reasonable time as provided by the rules of the Board of Adjustment, by filing with the City Manager a notice of appeal specifying the grounds thereof. The City Manager shall forthwith transmit to the Board of Adjustment all the papers constituting the record upon which the action appealed from was taken.

3. An appeal shall stay all proceedings in furtherance of the action appealed from unless the City Manager certifies to the Board of Adjustment, after the notice of appeal has been filed with it, that by reason of the facts stated in the certificate a stay would in the opinion of the City Manager cause imminent peril to life or property. In such case, proceedings shall not be stayed except by order of the Board of Adjustment or notice to the City Manager and on due cause shown.

4. The Board of Adjustment shall fix a reasonable time for hearing appeals, give public notice and due notice to the parties in interest, and decide the same within a reasonable time. Upon the hearing, any party may appear in person or by agent or by attorney.

5. The Board of Adjustment may, in conformity with the provisions of this Ordinance, reverse or affirm, in whole or in part, or modify the order, requirement, decision, or determination appealed from and may make such order, requirement, decision, or determination as may be appropriate under the circumstances.

SECTION XI: JUDICIAL REVIEW

Any person aggrieved, or any taxpayer affected, by any decision of the Board of Adjustment, may appeal to the Circuit Court as provided in Section III of Chapter 12 of the Public Laws of the State of xxxxx.

SECTION XII: PENALTIES

Each violation of this Ordinance or of any regulation, order, or ruling promulgated hereunder shall constitute a misdemeanor and be punishable by a fine of not more than 500 dollars or imprisonment for not more than 180 days or both; and each day a violation continues to exist shall constitute a separate offense.

SECTION XIII: CONFLICTING REGULATIONS

Where there exists a conflict between any of the regulations or limitations prescribed in this Ordinance and any other regulations applicable to the same area, whether the conflict be with respect to the height of structures or trees, and the use of land, or any other matter, the more stringent limitation or requirement shall govern and prevail.

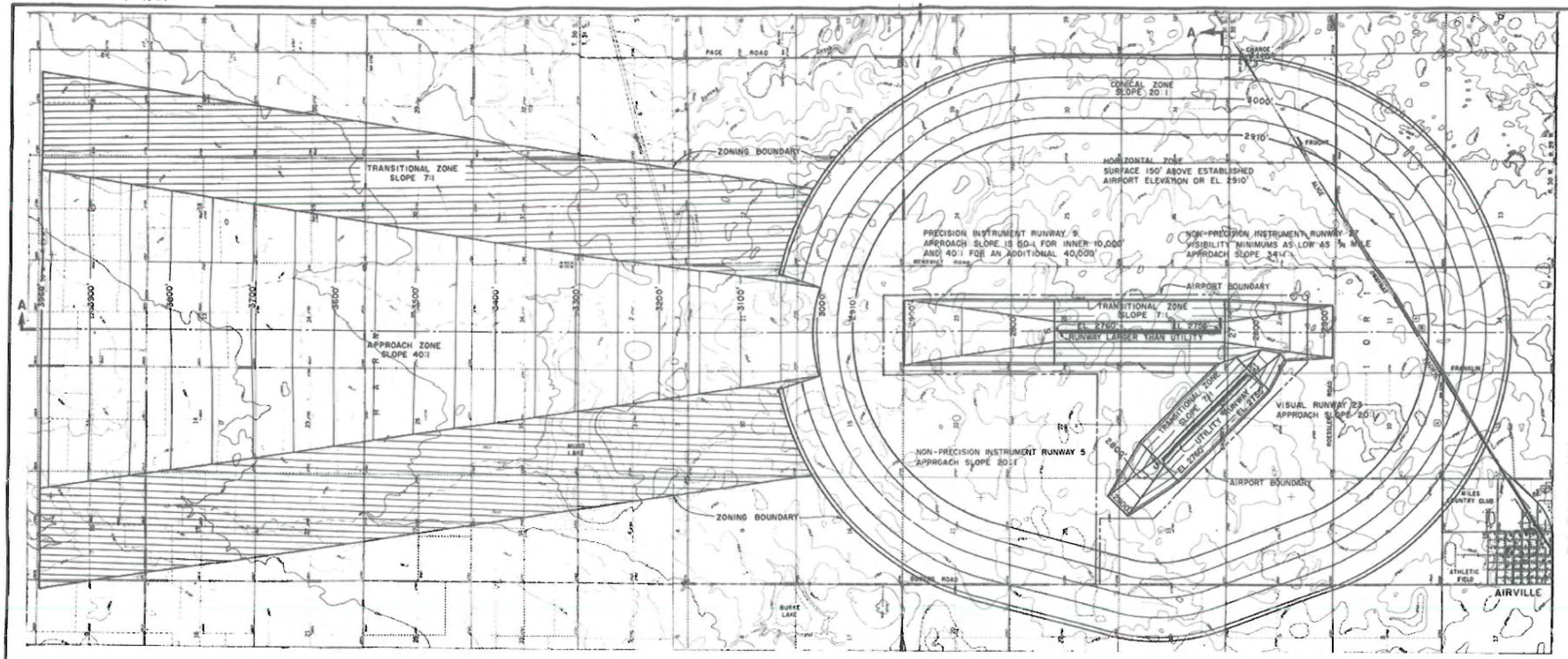
SECTION XIV: SEVERABILITY

If any of the provisions of this Ordinance or the application thereof to any person or circumstances are held invalid, such invalidity shall not affect other provisions or applications of the Ordinance which can be given effect without the invalid provision or application, and to this end, the provisions of this Ordinance are declared to be severable.

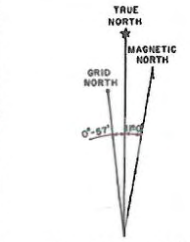
SECTION XV: EFFECTIVE DATE

WHEREAS, the immediate operation of the provisions of this Ordinance is necessary for the preservation of the public health, public safety, and general welfare, an EMERGENCY is hereby declared to exist, and this Ordinance shall be in full force and effect from and after its passage by the City Council and publication and posting as required by law. Adopted by the City Council this 12th day of October, 1975.

U.S. GOVERNMENT PRINTING OFFICE: 1990--722-568/20173



ZONING PLAN



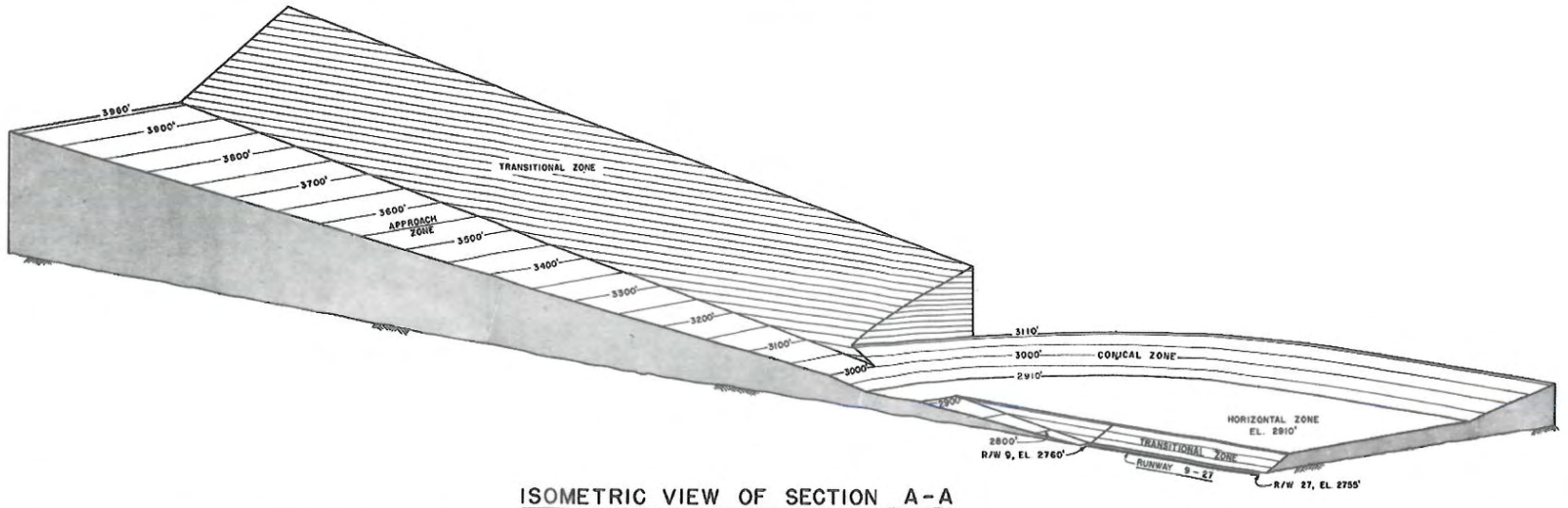
NORTH CENTRAL AIR STATE GRID
AND 1972 MAGNETIC NORTH DECLINATION

LEGEND

- ULTIMATE RUNWAY
- AIRPORT BOUNDARY
- ZONE BOUNDARIES
- TOPOGRAPHIC CONTOURS — 2710
- AERIAL CONTOURS — 2710
- MEDIUM DUTY ROAD
- LIGHT-DUTY ROAD
- UNIMPROVED DIRT ROAD

NOTES

1. THE AERIAL CONTOURS ILLUSTRATE THE HEIGHT LIMITATIONS WITHIN EACH ZONE.
2. A SLOPE, SUCH AS 20:1 EXPESSES THE HORIZONTAL DISTANCE OF 20 FEET TO THE VERTICAL DISTANCE OF 1 FOOT.
3. EXISTING TOPOGRAPHIC SYMBOLS ARE THOSE USED BY THE U.S. GEOLOGICAL SURVEY.
4. THE NORTH CENTRAL AIR STATE GRID SYSTEM IS USED.



ISOMETRIC VIEW OF SECTION A-A

SCALES

2000 0 2000 4000 6000
HORIZONTAL SCALE IN FEET

400 0 400 800 1200
VERTICAL SCALE IN FEET

CITY & COUNTY OF AIRVILLE
JOINT ZONING BOARD

AIRVILLE MUNICIPAL
AIRPORT ZONING MAP
ZONING ORDINANCE ADOPTED (DATE)

REVISION	APPROVED	
	REVIEWED	
	SUBMITTED	
	CHECKED	DWG BY:
	DATE / SHEET	DWG. NO.

Taxiway T

U.S. Department of Transportation

Federal Aviation Administration

Advisory Circular

Subject: Heliport Design	Date: 4/24/2012	AC No: 150/5390-2C
	Initiated by: AAS-100	Change:

1. Purpose. This advisory circular (AC) provides standards for the design of heliports serving helicopters with single rotors. Apply basic concepts to facilities serving helicopters with tandem (front and rear) or dual (side by side) rotors, however many standards will not apply.

2. Cancellation. This AC cancels AC 150/5390-2B, Heliport Design, dated September 30, 2004.

3. Application. The Federal Aviation Administration (FAA) recommends the guidelines and specifications in this AC for materials and methods used in the construction of heliports. In general, use of this AC is not mandatory. However, use of this AC is mandatory for all projects funded with federal grant monies through the Airport Improvement Program (AIP) and with revenue from the Passenger Facility Charge (PFC). See Grant Assurance No. 34, Policies, Standards, and Specifications, and PFC Assurance No. 9, Standards and Specifications. For information about grant assurances, see http://www.faa.gov/airports/aip/grant_assurances/. The use of terms implying strict compliance applies only to those projects. Other federal agencies, states, or other authorities having jurisdiction over the construction of other heliports decide the extent to which these standards apply.

4. Principal changes.

a. Changed the term for the helicopter overall length (OL) to 'D' or 'D-value.'

b. Added definitions for design loads for static and dynamic load-bearing areas (LBA).

c. Added guidance for pavement or structure larger than the touchdown and liftoff area (TLOF), but less than the size of the final approach and take off (FATO).

d. Added guidance for turbulence effects.

e. Added guidance to provide adequate clearance between parking areas and taxi routes and within parking areas.

f. Added guidance for minimum dimensions of curved approach/departure airspace.

g. Added guidance for Touchdown/Positioning Circle (TDPC) Marking.

h. Added guidance for Flight Path Alignment Guidance markings and lights.

i. Added an appendix providing guidance for Emergency Helicopter Landing Facility Requirements (EHLF).

j. Added FATO to FATO separation distance for simultaneous operations.

k. Revised standards for size of "H" for general aviation heliports.

l. Added increased TLOF size when the FATO of a hospital heliport is not load bearing.

n. Combined chapter 6, Non-Precision Instrument Operations and Chapter 7, Precision Approach Operations into chapter 6, Instrument Operations. Reference FAA Order 8620 series.

o. To improve the legibility of the AC, changed the format to a single column and nested the tables in the text.

p. Deleted requirements for load bearing capacity of a FATO at general aviation and hospital heliports when the TLOF is marked.

q. Changed color of landing direction lights from yellow to green.

r. Added references to Engineering Brief 87, Heliport Lights for Visual Meteorological Conditions (VMC).

5. Use of metrics. This AC includes both English and metric dimensions. The metric conversions may not be exact equivalents, and the English dimensions govern.

6. Copies of this AC. This and other advisory circulars published by the Office of Airport Safety and Standards are available on the FAA Office of Airports web page at www.faa.gov/airports.

MICHAEL J. O'DONNELL

Director of Airport Safety and Standards

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Chapter 1. Introduction

101. Background. Section 103 of the Federal Aviation Act of 1958 states in part, "In the exercise and performance of his power and duties under this Act, the Secretary of Transportation shall consider the following, among other things, as being in the public interest: (a) The regulation of air commerce in such manner as to best promote its development and safety and fulfill the requirements of defense; (b) The promotion, encouragement, and development of civil aeronautics . . ." This public charge, in effect, requires the development and maintenance of a national system of safe heliports. Using the standards and recommendations contained in this publication in the design of heliports supports this public charge. These standards and recommendations, however, do not limit or regulate the operations of aircraft. When it is not feasible to meet all the standards and recommendations in this AC, consult with the appropriate offices of the Federal Aviation Administration (FAA) Office of Airports and Flight Standards Service to identify any adjustments to operational procedures necessary to accommodate operations to the maximum extent.

102. General. This chapter provides an explanation of terms used in this AC, describes the notification responsibilities of heliport proponents to FAA, provides general siting guidance, and identifies sources of technical information relating to heliport planning and design of a civil heliport.

103. Facilities. While heliports can be large and elaborate, most are not. The basic elements of a heliport are clear approach/departure paths, a clear area for ground maneuvers, final approach and takeoff area (FATO), touchdown and liftoff area (TLOF), safety area, and a wind cone. This minimal facility may be adequate as a private use prior permission required (PPR) heliport, and may even suffice as the initial phase in the development of a public use heliport capable of serving the general aviation segment of the helicopter community.

104. Planning. While the heliport itself may be simple, the planning and organization required to properly put one into place can be intimidating. Consider the physical, technical, and public interest matters described in this document in the planning and establishment of a heliport. While this AC is a technical document intended to help engineers, architects, and city planners design, locate, and build the most effective heliport, anyone considering the construction of a heliport can use it. Figures in this document are general representations and are not to scale.

105. Existing heliports. When a change to an existing heliport requires the submission of FAA Form 7460-1, Notice of Proposed Construction or Alteration, or FAA Form 7480-1, Notice of Landing Area Proposal, bring the heliport up to current standards. It may not, however, be feasible to meet all current standards at existing heliports. In those cases, consult with the appropriate offices of the FAA Office of Airports and Flight Standards Service to identify any adjustments to operational procedures necessary to accommodate operations to the maximum extent.

106. Location. The optimum location for a heliport is near the desired origination and/or destination of the potential users. Industrial, commercial, and business operations in urban locations are demand generators for helicopter services, even though they often compete for the limited ground space available. Heliport sites may be adjacent to a river or a lake, a railroad, a freeway, or a highway, all of which offer the potential for multi-functional land usage. These locations also have the advantage of relatively unobstructed airspace, which can be further protected from unwanted encroachment by properly enacted zoning. As vertical flight transportation becomes more prevalent, requirements for scheduled "airline type" passenger services may necessitate the development of an instrument procedure to permit "all-weather" service.

107. AC organization. This AC is structured to provide communities and persons intending to develop a heliport, or become involved in regulating helicopter facilities, with general guidance on heliport requirements. The AC covers general aviation heliports (including PPR), transport heliports, hospital heliports, and emergency landing facilities. It is important for a heliport proponent to be familiar with the terminology used in this specialized field. This chapter defines terms used in the industry and identifies actions common to developing a heliport.

a. General aviation heliports. The term "general aviation" is technically defined as "flights conducted by operators other than Title 14 of the Code of Federal Regulations (CFR) Part 121 or Part 135 certificate holders."[1] However, for the purposes of this AC, "general aviation" refers to all helicopter operations other than scheduled passenger service. Hospital heliports and emergency landing facilities fall under general aviation, but are treated separately in the AC due to their unique requirements. General aviation heliports are normally privately owned although they can be publicly owned. Find design standards for general aviation heliports in Chapter 2.

b. Transport heliports. Transport heliports will provide the community with a full range of vertical flight services including scheduled service by air carriers (airlines) using helicopters. These operations will require a more extensive airside and landside infrastructure with the potential capability to operate in instrument meteorological conditions. Find design standards for transport heliports in Chapter 3.

c. Hospital heliports. Hospital heliports are general aviation heliports that provide a unique public service. They are normally located close to the hospital emergency room or a medical facility. Find design standards for hospital heliports in Chapter 4.

d. Helicopter facilities on airports. When there are a significant number of helicopter operations on an airport, consider developing separate facilities specifically for helicopter use. Chapter 5 addresses helicopter facilities on airports.

e. Instrument operations. With the introduction of the global positioning system (GPS), it is now practical for heliports to have instrument approach procedures. Good planning suggests that heliport proponents plan for the eventual development of instrument approaches to their heliports. Consider the recommendations in Chapter 6 in contemplating future instrument operations at a heliport. It is wise to consider these issues during site selection and design.

f. Heliport gradients and pavement design. Chapter 7 addresses heliport gradients and pavement design issues.

g. The appendices provide information about emergency helicopter landing facilities, helicopter dimensional data, form and proportions of certain heliport markings, and a list of publications and resources referenced in this AC.

108. Explanation of terms. The Pilot/Controller Glossary of the Aeronautical Information Manual (AIM) defines terms used in the Air Traffic System. Copies of the AIM are available from the FAA web site http://www.faa.gov/atpubs. Other terms used in this publication follow:

a. Air taxi. Used both to refer to on-demand air carriers and as a synonym for "hover taxi." See hover taxi.

b. Approach/departure path. The flight track helicopters follow when landing at or departing from a heliport. The approach/departure paths may be straight or curved.

[1]Plane Sense General Aviation Information, U.S. Department of Transportation FAA-H-8083-19A, http://www.faa.gov/library/manuals/aviation/media/faa-h-8083-19A.pdf

c. Design helicopter. A single or composite helicopter that reflects the maximum weight, maximum contact load/minimum contact area, overall length (D), rotor diameter (RD), tail rotor arc radius, undercarriage dimensions, and pilot's eye height of all helicopters expected to operate at the heliport.

d. D (Formerly "OL"). The overall length of the helicopter, which is the dimension from the tip of the main or forward rotor to the tip of the tail rotor, fin, or other rear-most point of the helicopter. This value is with the rotors at their maximum extension. See Figure B–1. If only the value of the rotor diameter (RD) is known, estimate the value for D using the relationship D = 1.2 RD (or conversely, RD = 0.83 D).

e. Design loads. Design and construct the TLOF and any load-bearing surfaces to support the loads imposed by the design helicopter and any ground support vehicles and equipment.

(1) Static load. For design purposes, the design static load is equal to the helicopter's maximum takeoff weight applied through the total contact area of the wheels or skids. See paragraph 707.

(2) Dynamic load. For design purposes, assume the dynamic load at 150 percent of the maximum takeoff weight of the design helicopter applied through the main undercarriage on a wheel-equipped helicopter or aft contact areas of skid-equipped helicopter. See paragraph 707.

f. Elevated heliport. A heliport located on a rooftop or other elevated structure where the TLOF is at least 30 inches (76 cm) above the surrounding surface (a ground level heliport with the TLOF on a mound is not an elevated heliport).

g. Emergency helicopter landing facility (EHLF). A clear area at ground level or on the roof of a building capable of accommodating helicopters engaged in fire fighting and/or emergency evacuation operations. An EHLF meets the definition of a heliport in this AC and under Title 14 CFR Part 157, Notice of Construction, Alteration, Activation, and Deactivation of Airports.

h. Final approach and takeoff area (FATO). A defined area over which the pilot completes the final phase of the approach to a hover or a landing and from which the pilot initiates takeoff. The FATO elevation is the lowest elevation of the edge of the TLOF. See Figure 7–3.

i. Final approach reference area (FARA). An obstacle-free area with its center aligned on the final approach course. It is located at the end of a precision instrument FATO.

j. Flush lights. Where the term "flush lights" is specified in this AC, interpret it as including semi-flush lights.

k. Frangible/frangibly mounted. While there is no accepted standard for frangibility in regard to helicopter operations, remove all objects from a FATO or safety area except those of the lowest mass practicable and frangibly mounted to the extent practicable.

l. General aviation heliport. A heliport intended to accommodate individuals, corporations, helicopter air taxi operators, and public safety agencies. For the purposes of this AC, "general aviation" refers to all helicopter operations other than scheduled passenger service. Hospital heliports and emergency landing facilities fall under general aviation, but are treated separately in the AC due to their unique requirements.

m. Ground taxi. The surface movement of a wheeled helicopter under its own power with wheels touching the ground.

n. Hazard to air navigation. Any object having a substantial adverse effect upon the safe and efficient use of the navigable airspace by aircraft, upon the operation of air navigation facilities, or upon existing or planned airport/heliport capacity as determined by the FAA.

o. Heliport. The area of land, water, or a structure used or intended to be used for the landing and takeoff of helicopters, together with appurtenant buildings and facilities.

p. Heliport elevation. The highest point of the TLOF expressed as the distance above mean sea level.

q. Heliport imaginary surfaces. The imaginary planes defined in Title 14 CFR Part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace, centered about the FATO and the approach/departure paths, which are used to identify the objects where notice to and evaluation by the FAA is required. Recommendations may include realignment of approach/departure paths or removal, lowering, marking and lighting of objects.

r. Heliport layout plan. The plan of a heliport showing the layout of existing and proposed heliport facilities including the approach/departure paths.

s. Heliport protection zone (HPZ). An area off the end of the FATO and under the approach/departure path intended to enhance the protection of people and property on the ground.

t. Heliport reference point (HRP). The geographic position of the heliport expressed as the latitude and longitude at:

(1) The center of the FATO, or the centroid of multiple FATOs, for heliports having visual and non-precision instrument approach procedures; or

(2) The center of the FARA when the heliport has a precision instrument procedure.

u. Helistop. A term sometimes used to describe a minimally developed heliport for boarding and discharging passengers or cargo. This AC does not use this term, as the design standards and recommendations this AC apply to all heliports.

v. Hospital heliport. A heliport limited to serving helicopters engaged in air ambulance, or other hospital related functions. A designated helicopter landing area located at a hospital or medical facility is a heliport and not a medical emergency site.

w. Hover taxi (also called air taxi). The movement of a wheeled or skid-equipped helicopter above the surface. Generally, this takes place at a wheel/skid height of 1 to 5 feet (0.3 to 1.5 m) and at a ground speed of less than 20 knots (37 km/h). For facility design purposes, assume a skid-equipped helicopter to hover-taxi.

x. Landing position. An area, normally located in the center of an elongated TLOF, on which the helicopter lands.

y. Large helicopter. A helicopter with a maximum takeoff weight of more than 12,500 lbs.

z. Load-bearing area (LBA). The portion of the FATO capable of supporting the dynamic load of the design helicopter.

aa. Medical emergency site. An unprepared site at or near the scene of an accident or similar medical emergency on which a helicopter may land to pick up a patient in order to provide emergency medical transport. A medical emergency site is not a heliport as defined in this AC.

bb. Medium helicopter. A helicopter with a maximum takeoff weight of 7,001 to 12,500 lbs.

cc. Obstruction to air navigation. Any fixed or mobile object, including a parked helicopter, of greater height than any of the heights or surfaces presented in subpart C of part 77 (see also paragraph 111 in this AC).

dd. Overall length (D). See D, paragraph 108.d.

ee. Parking pad. The paved center portion of a parking position.

ff. Prior permission required (PPR) heliport. A heliport developed for exclusive use of the owner and persons authorized by the owner and about which the owner and operator ensure all authorized pilots are thoroughly knowledgeable. These features include but are not limited to: approach/departure path characteristics, preferred heading, facility limitations, lighting, obstacles in the area, and size and weight capacity of the facility.

gg. Public use heliport. A heliport available for use by the general public without a requirement for prior approval of the owner or operator.

hh. RD. Rotor Diameter. The length of the main rotor, from tip to tip.

ii. Rotor downwash. The downward movement of air caused by the action of the rotating main rotor blades. When this air strikes the ground or some other surface, it causes a turbulent outflow of air from beneath the helicopter.

jj. Safety area. A defined area on a heliport surrounding the FATO intended to reduce the risk of damage to helicopters accidentally diverging from the FATO.

kk. Shielded obstruction. A proposed or existing obstruction that does not need to be marked or lighted due to its close proximity to another obstruction whose highest point is at the same or higher elevation.

ll. Shoulder line. A marking line perpendicular to a helicopter parking position centerline that is intended to provide the pilot with a visual cue to assist in parking.

mm. Small helicopter. A helicopter with a maximum takeoff weight of 7,000 lbs or less.

nn. Tail rotor arc radius. The distance from the hub of the main rotor to the outermost tip of the tail rotor or the rear-most point of the helicopter tail, whichever is farther.

oo. Takeoff position. An area, normally located on the centerline and at the ends of an elongated TLOF, from which the helicopter takes off. Typically, there are two such positions on an elongated TLOF, one at each end.

pp. Taxi route. An obstruction-free corridor established for the movement of helicopters from one part of a heliport/airport to another. A taxi route includes the taxiway plus the appropriate clearances on both sides.

qq. Taxiway. A marked route between the TLOF and other areas on the heliport. This AC defines two types of helicopter taxiways:

(1) Ground taxiway. A taxiway intended to permit the surface movement of a wheeled helicopter under its own power with wheels on the ground. The minimum dimensions defined for a ground taxiway may not be adequate for hover taxi.

(2) Hover taxiway. A taxiway intended to permit the hover taxiing of a helicopter.

rr. Touchdown and liftoff area (TLOF). A load-bearing, generally paved area, normally centered in the FATO, on which the helicopter lands and/or takes off.

ss. Transport heliport. A heliport intended to accommodate air carrier operators providing scheduled service.

tt. Touchdown/positioning circle (TDPC) marking. A circular marking located in the center of a TLOF or a parking position. When the pilot's seat is over the TDPC, the whole of the helicopter undercarriage will be within the TLOF or parking position and all parts of the helicopter rotor system will be clear of any obstacle by a safe margin.

uu. Unshielded obstruction. A proposed or existing obstruction that may need to be marked or lighted since it is not near another marked and lighted obstruction whose highest point is at the same or higher elevation.

109. Selection of approach/departure paths. Design heliports to the extent practicable for two approach/departure paths. Consider items such as the following in selecting the approach/departure paths:

a. Wind. Well-designed approach/departure paths permit pilots to avoid downwind conditions and minimize crosswind operations. Align the preferred flight approach/departure path, to the extent feasible, with the predominant wind direction. Base other approach/departure paths on the assessment of the prevailing winds or, when this information is not available, separate such flight paths and the preferred flight path by at least 135 degrees. If it is not feasible to provide complete coverage of wind through multiple approach/departure paths, operational limitations may be necessary under certain wind conditions. See paragraph 101.

b. Obstructions. In determining approach/departure paths, take into account the obstructions in the vicinity of the heliport and, in particular, those likely to be a hazard to air navigation. See paragraph 111.

c. Environmental impacts. In environmentally sensitive areas, select the final approach/departure path(s) to minimize any environmental impact, providing it does not decrease flight safety. See paragraph 113.

110. Notification requirements. Part 157 sets requirements for persons proposing to construct, activate, deactivate, or alter a heliport to give advance notice of their intent to the FAA. This includes changing the size or number of FATOs; adding, deleting, or changing an approach or departure route; or changing heliport status. An example of a heliport status change would be a change from private to public use or vice versa. When notification is required, file Form 7480-1 (see Figure 1–1) with the appropriate FAA Airports Regional or District Office at least 90 days before construction, alteration, deactivation, or change in use. See the FAA Airports web site at http://www.faa.gov/airports/ for contact information.

a. Draw the heliport layout plan to scale showing key dimensions, such as the heliport elevation, TLOF size, FATO size, safety area size, distance from safety area perimeter to property edges, and approach/departure paths showing locations of buildings, trees, fences, power lines, obstructions (including elevations), schools, churches, hospitals, residential communities, waste disposal sites, and other significant features as specified on Form 7480-1 and as suggested in Figure 1–2.

b. The preferred type of location map is the 7.5-minute U.S. Geological Survey Quadrangle Map, available from the US Geological Survey at nationalmap.gov. Web-based maps are also acceptable. Show the location of the heliport site and the approach/departure paths on the map. Point out the heliport site on this map with an arrow. Indicate the latitude and longitude of the proposed heliport in North American Datum of 1983 (NAD-83) coordinates. See Figure 1–3.

c. The FAA role. The FAA will conduct an aeronautical study of the proposed heliport under part 157. Title 14 CFR Part 157.7, FAA determinations, states: “The FAA will conduct an aeronautical study of an airport proposal and, after consultations with interested persons, as appropriate, issue a determination to the proponent and advise those concerned of the FAA determination. The FAA will consider matters such as the effects the proposed action would have on existing or contemplated traffic patterns of neighboring airports; the effects the proposed action would have on the existing airspace structure and projected programs of the FAA; and the effects that existing or proposed manmade objects (on file with the FAA) and natural objects within the affected area would have on the airport proposal. While determinations consider the effects of the proposed action on the safe and efficient use of airspace by aircraft and the safety of persons and property on the ground, the determinations are only advisory. Except for an objectionable determination, each determination will contain a determination-void date to

facilitate efficient planning of the use of the navigable airspace. A determination does not relieve the proponent of responsibility for compliance with any local law, ordinance or regulation, or state or other federal regulation. Aeronautical studies and determinations will not consider environmental or land use compatibility impacts."

Form approved OMB No. 2120-0036

U.S. Department of Transportation
Federal Aviation Administration

NOTICE OF LANDING AREA PROPOSAL

Name of Proponent, Individual , or Organization	Address of Proponent, Individual , or Organization (No., Street, City, State, Zip Code)
☐ Check if the property owner's name and address are different than above, and list property owner's name and address on the reverse.	

☐ Establishment or Activation ☐ Deactivation or Abandonment ☐ Alteration ☐ Change of Status } OF ☐ Airport ☐ Ultraflight Flightpark ☐ Vertiport ☐ Heliport ☐ Seaplane Base ☐ Other (Specify)

A. Location of Landing Area

1. Associated City/State	2. County/State (Physical Location of Airport)			3. Distance and Direction From Associated City or Town	
4. Name of Landing Area	5. Latitude ° ' "	6. Longitude ° ' "	7. Elevation	Miles	Direction

B. Purpose

Type Use	If Change of Status or Alteration, Describe Change	☐	Construction Dates	
☐ Public ☐ Private ☐ Private Use of Public Land/Waters		Establishment or change to traffic pattern (Describe on reverse)	To Begin/Began	Est. Completion

C. Other Landing Areas	Ref. A5 above: Direction From Landing Area	Ref. A5 above: Distance From Landing Area

D. Landing Area Data	Existing (if any) Rwy #1	Existing (if any) Rwy #2	Existing (if any) Rwy #3	Proposed Rwy	Proposed Rwy	Proposed Rwy
1. Airport, Seaplane Base, or Flightpark						
Magnetic Bearing of Runway (s) or Sealane						
Length of Runway (s) or Sealane (s) in Feet						
Width of Runway (s) or Sealane (s) in Feet						
Type of Runway Surface (Concrete, Asphalt, Turf, Etc.)						
2. Heliport						
Dimensions of Final Approach and Take off Area (FATO) in Feet						
Dimensions of Touchdown and Lift-Off Area (TLOF) in Feet						
Magnetic Direction of Ingress/Egress Routes						
Type of Surface (Turf, concrete, rooftop, etc.)						

E. Obstructions Type	Height Above Landing Area	Direction From Landing Area	Distance From Landing Area

3. All Landing Areas: Description of Lighting (If any)	Direction of Prevailing Wind

F. Operational Data

1. Estimated or Actual Number Based Aircraft

Airport, Flightpark, Seaplane base	Present (If est. indicate by letter "E")	Anticipated 5 Years Hence	Heliport	Present (If est. indicate by letter "E")	Anticipated 5 Years Hence
Multi-engine			Under 3500 lbs. MGW		
Single-engine			Over 3500 lbs. MGW		
Glider					

G. Other Considerations

Identification	Direction From Landing Area	Distance From Landing Area

2. Average Number Monthly Landings

	Present (If est. indicate by letter "E")	Anticipated 5 Years Hence		Present (If est. indicate by letter "E")	Anticipated 5 Years Hence
Jet			Helicopter		
Turboprop			Ultralight		
Prop			Glider		

3. Are IFR Procedures For The Airport Anticipated ☐ No ☐ Yes Within _____ Years Type Navaid:

H. Application for Airport Licensing

☐ Has Been Made ☐ Will Be Made ☐ Not Required ☐ State ☐ County ☐ Municipal Authority

I. CERTIFICATION: I hereby certify that all of the above statements made by me are true and complete to the best of my knowledge.

Name, title (and address if different than above) of person filing this notice -- type or print	Signature (in ink)	
	Date of Signature	Telephone No. (Precede with area code)

FAA Form 7480-1 (1-93) Supersedes Previous Edition Central Region Electronic Revision per ACE-625 (1-97)

Figure 1–1. Form 7480-1, Notice of Landing Area Proposal

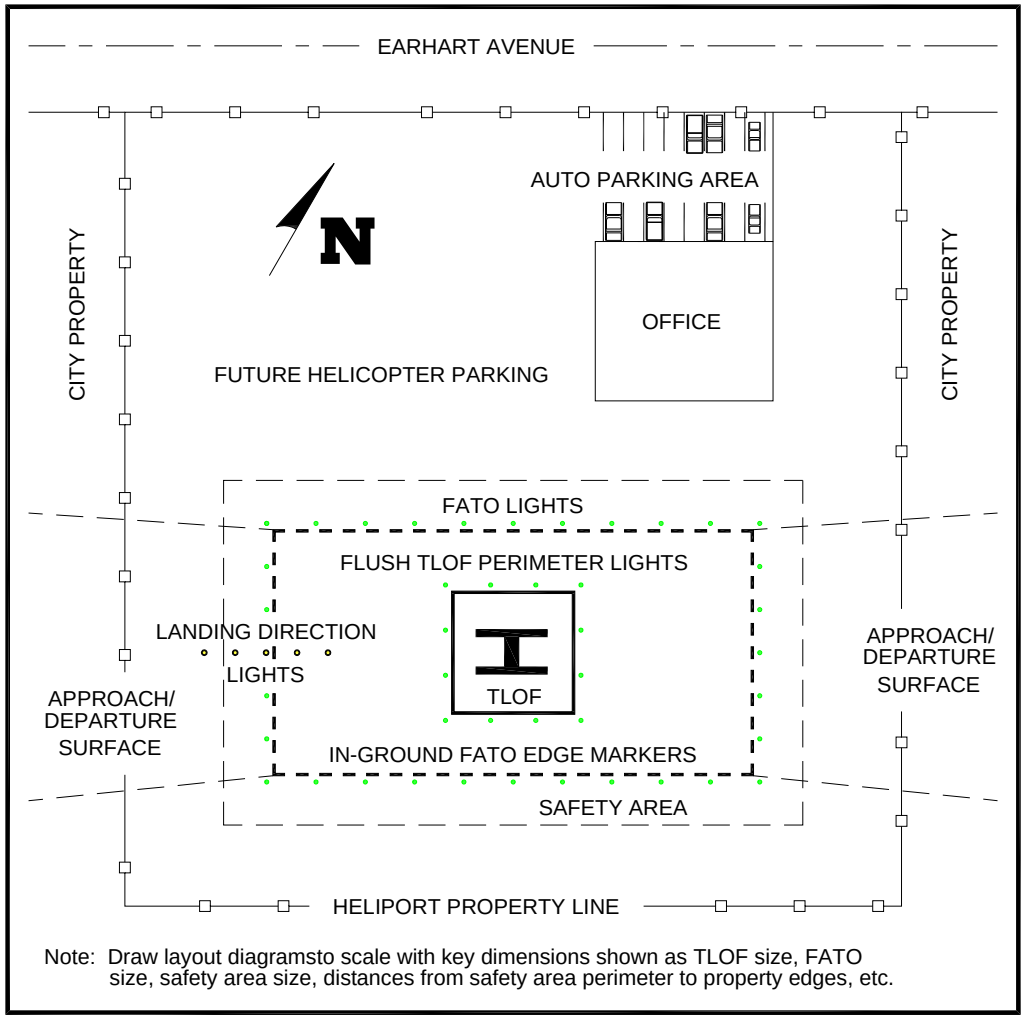


Figure 1–2. Example of a Heliport Layout Plan

d. Penalty for failure to provide notice. Persons who fail to give notice are subject to civil penalty under Title 49 United States Code 46301, Civil Penalties, of not more than $25,000 (or $1,100 if the person is an individual or small business concern).

e. Notice exemptions. Paragraph 157.1, Applicability, of part 157 exempts sites meeting one of the conditions below from the requirement to submit notice. These exemptions do not negate a notice or formal approval requirement prescribed by state law or local ordinance. For the purposes of applying the part 157 exemption criteria cited in (2) and (3) below, a landing and associated takeoff is considered to be one operation. Part 157.1 projects are:

(1) [A heliport] subject to conditions of a federal agreement that requires an approved current heliport layout plan to be on file with the FAA, or

(2) [A heliport] at which flight operations will be conducted under visual flight rules (VFR) and which is used or intended to be used for a period of less than 30 consecutive days with no more than 10 operations per day.

(3) The intermittent use of a site that is not an established airport, that is used or intended to be used for less than 1 year, and at which flight operations will be conducted only under VFR. For the purpose of this part, "intermittent use of a site" means:

(a) the site is used or is intended to be used for no more than 3 days in any one week and

(b) no more than 10 operations will be conducted in any one day at that site.

111. Hazards to air navigation. Part 77 establishes requirements for notification to the FAA of objects that may affect navigable airspace. It sets standards for determining obstructions to navigable airspace and provides for aeronautical studies of such obstructions to determine their effect on the safe and efficient use of airspace. Part 77 applies only to public airports and heliports, airports operated by a federal agency or the Department of Defense, and private airports and heliports with at least one FAA-approved instrument approach procedure. See Figure 1–4.

a. FAA studies.

(1) Part 77. Part 77 defines objects that are obstructions to surfaces. Presume these objects to be hazards unless an FAA study determines otherwise. The FAA conducts aeronautical studies to determine the physical and electromagnetic effect on the use of navigable airspace, air navigational facilities, public airports and heliports, and private airports and heliports with at least one FAA-approved instrument approach procedure. The FAA encourages public agencies to enact zoning ordinances to prevent man-made features from becoming hazards to navigation.

(2) Part 157. While the FAA performs aeronautical studies under part 157 (see paragraph 110.c), such studies do not identify hazards to private facilities that do not have an FAA-approved instrument approach.

b. Mitigation of hazards. You may mitigate the adverse effect of an object presumed or determined to be a hazard by:

(1) Removing the object.

(2) Altering the object, for example, reducing its height.

(3) Marking and/or lighting the object, provided an FAA aeronautical study has determined that the object would not be a hazard to air navigation if it were marked and/or lighted. Find guidance on marking and lighting objects in AC 70/7460-1, Obstruction Marking and Lighting.

c. Notification requirements. Part 77 requires persons proposing certain construction or alteration to give 45-day notice to the FAA of their intent. Use FAA Form 7460-1, Notice of Proposed Construction or Alteration to provide notification. See https://oeaaa.faa.gov for more information and to download the form.

d. Heliport development plans. Future public heliport development plans and feasibility studies on file with the FAA may influence the determinations resulting from part 77 studies. Owners of public heliports and owners of private heliports with FAA-approved instrument approach procedures can ensure full consideration of future heliport development in part 77 studies only when they file plans with the FAA. Include in heliport plan data the coordinates and elevations of planned FATO(s), approach/departure paths including their azimuths, and types of approaches for any new FATO or modification of an existing FATO.

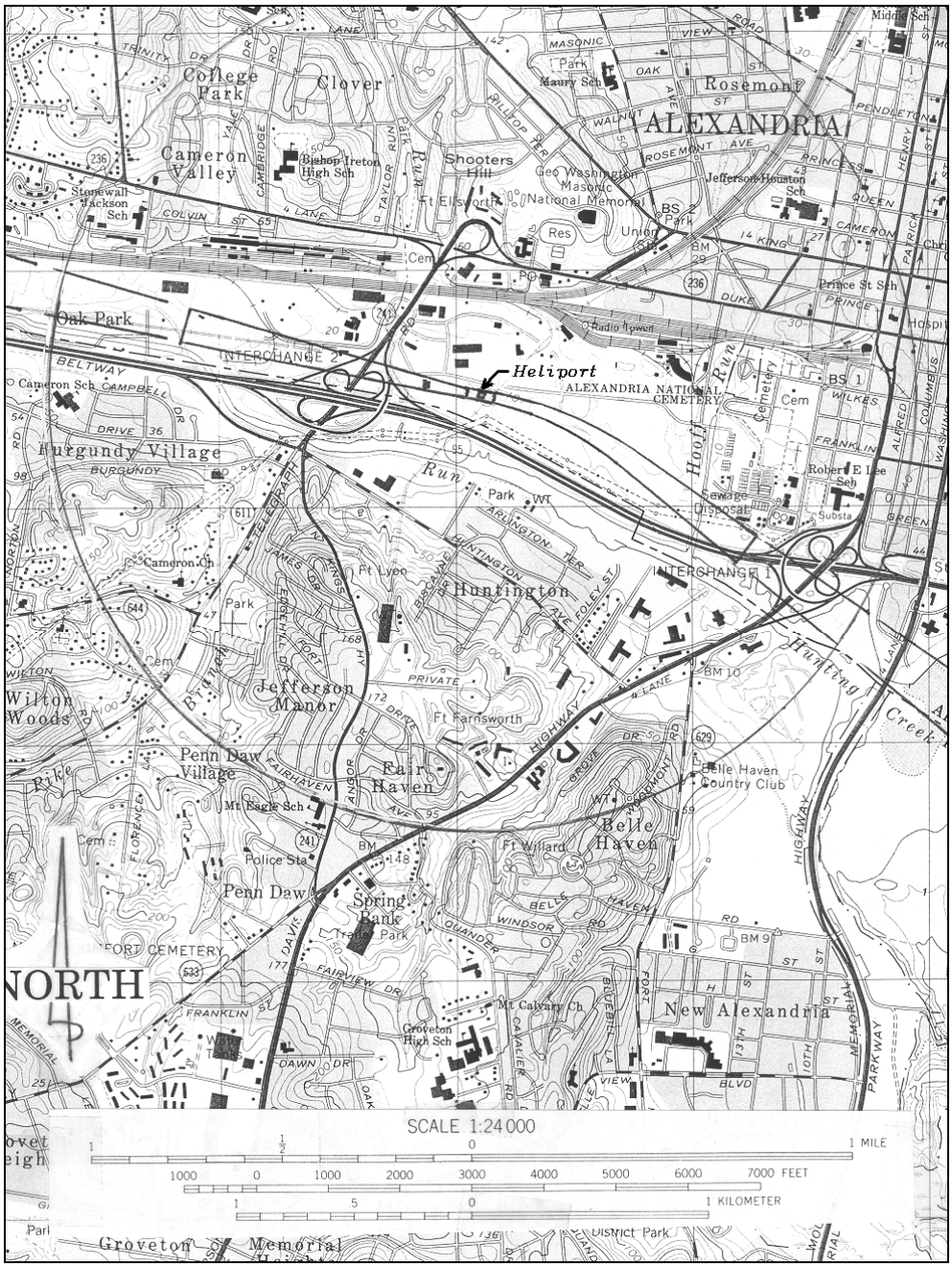


Figure 1–3. Example of a Heliport Location Map

112. Federal assistance. The FAA administers a grant program that provides financial assistance to eligible sponsors to develop a public use heliport. Information on federal aid program eligibility requirements is available from FAA Airports Regional and District Offices and on the FAA Airports web site, www.faa.gov/airports.

113. Environmental impact analyses. The National Environmental Policy Act of 1969 requires the FAA to consider potential environmental impacts prior to agency decision making, including, for example, the decision to fund or approve a project, plan, license, permit, certification, rulemaking, or operations specification, unless these actions are within an existing categorical exclusion and no

extraordinary circumstances exist. Actions that may require an environmental assessment are normally associated with federal grants or heliport layout plan approvals leading to the construction of a new heliport or significant expansion of an existing heliport.

a. Assessment items. An environmental assessment addresses noise, historic and cultural resources, wildlife, energy conservation, land usage, air quality, water quality, pollution prevention, light emissions and other visual effects, electromagnetic fields, other public health and safety issues, the "no action" alternative and a reasonable range of feasible alternatives, including mitigation not integrated into the alternative initially. It also describes the action taken to ensure public involvement in the planning process. An opportunity for a public hearing may be required for the federally funded development of, or significant improvement to, an existing heliport.

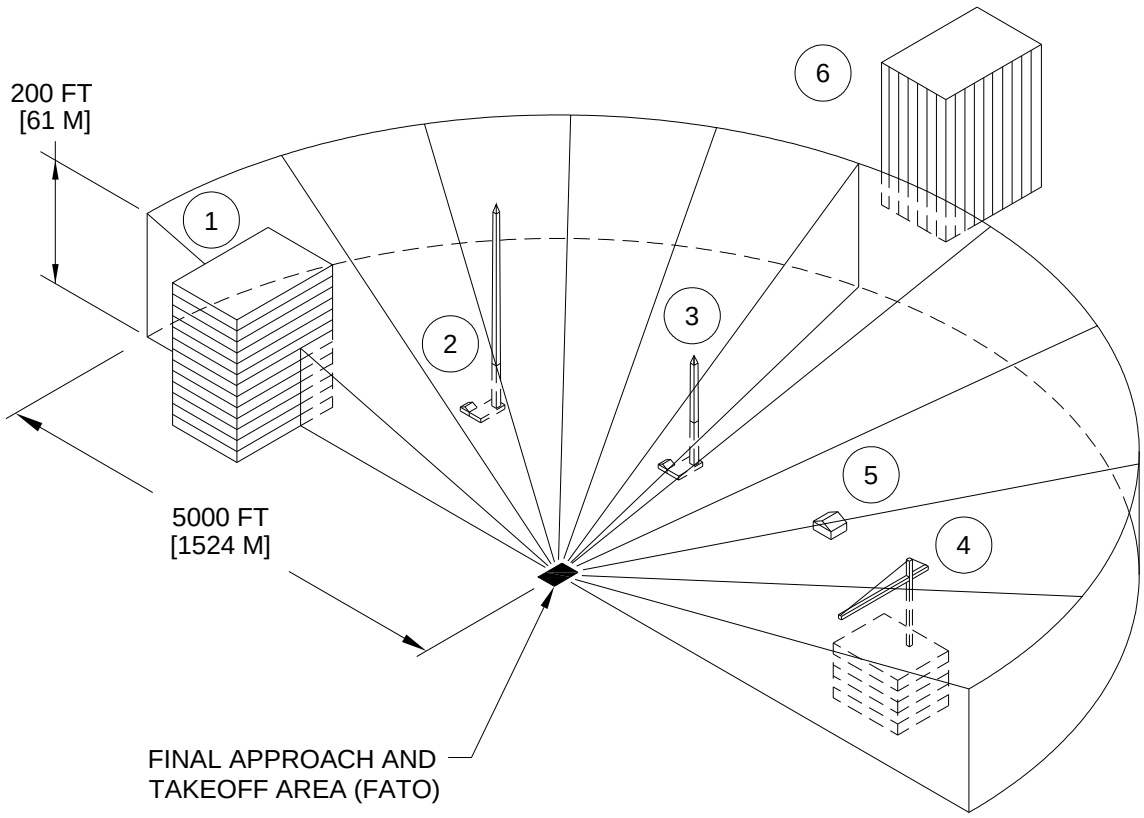
b. Guidance. FAA Order 5050.4, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Projects, and FAA Order 1050.1, Polices and Procedures for Considering Environmental Impacts, and other supplemental guidance from FAA Air Traffic and Flight Standards provide guidance on environmental impact analysis. Contact state and local governments, including metropolitan planning organizations and local transit agencies, directly as they may also require an environmental report. The procedures in AC 150/5020-1, Noise Control and Compatibility Planning for Airports, describe a means of assessing the noise impact. Contact the appropriate FAA Airports Regional or District Office for current information related to assessing noise impact of heliports. Proponents of non-federally assisted heliports work with local governmental authorities concerning environmental issues.

114. Access to heliports by individuals with disabilities. Congress has passed various laws concerning access to airports. Since heliports are a type of airport, these laws are similarly applicable. Find guidance in AC 150/5360-14, Access to Airports by Individuals with Disabilities.

115. State role. Many state departments of transportation, aeronautical commissions, or similar authorities require prior approval and, in some instances, a license for the establishment and operation of a heliport. Several states administer a financial assistance program similar to the federal program and are staffed to provide technical advice. Contact your respective state aeronautics commissions or departments for particulars on licensing and assistance programs. Contact information for state aviation agencies is available at http://www.faa.gov/airports/resources/state_aviation.

116. Local role. Some communities have enacted zoning laws, building codes, fire regulations, etc. that can affect heliport establishment and operation. Some have or are in the process of developing codes or ordinances regulating environmental issues such as noise and air pollution. A few localities have enacted specific rules governing the establishment of a heliport. Therefore, make early contact with officials or agencies representing the local zoning board, the fire, police, or sheriff's department, and the elected person(s) who represent the area where the heliport is to be located.

117. Related referenced material. Find a list of related and referenced publications in Appendix D.



Notes:

1. Building is less than 200 ft [61 m] in height, but top will penetrate the 25:1 surface (notice is required by 14 CFR part 77.9).
2. Antenna is over 200 ft [61 m] in height (notice is required by 14 CFR part 77.9 (a)).
3. Antenna is less than 200 ft [61 m] in height, and penetrates the 25:1 surface (notice is required by 14 CFR part 77.9 (b)(3)).
4. Construction crane penetrates 25:1 surface (notice is required by 14 CFR part 77.9 (b)(3)).
5. Building is less than 200 ft [61 m] in height and does not penetrate the 25:1 surface (notice is not required).
6. Building is more than 5,000 ft [1,525 m] from heliport (notice is required if building will be 200 ft [61 m] or more in height).

Note: Notice under 14 CFR part 77 required for all public-use heliports or a private use heliport with at least one FAA-approved instrument approach procedure.

Figure 1–4. Offsite Development Requiring Notice to the FAA

Chapter 2. General Aviation Heliports

201. General. A general aviation heliport accommodates helicopters used by individuals, corporations, and helicopter air taxi services. While general aviation heliports may be publicly owned, this is not required. Most general aviation heliports are privately owned.

202. Applicability. The standards in this chapter apply to projects funded under the Airport Improvement Program (AIP) or the Passenger Facility Charge (PFC) program. For other projects/heliports, these standards are the FAA's recommendations for designing all general aviation heliports. The design standards in this chapter assume that there will never be more than one helicopter within the final approach and takeoff area (FATO) and the associated safety area. If there is a need for more than one touchdown and liftoff area (TLOF) at a heliport, locate each TLOF within its own FATO and within its own safety area. Figure 2–1 illustrates the essential features of a general aviation heliport.

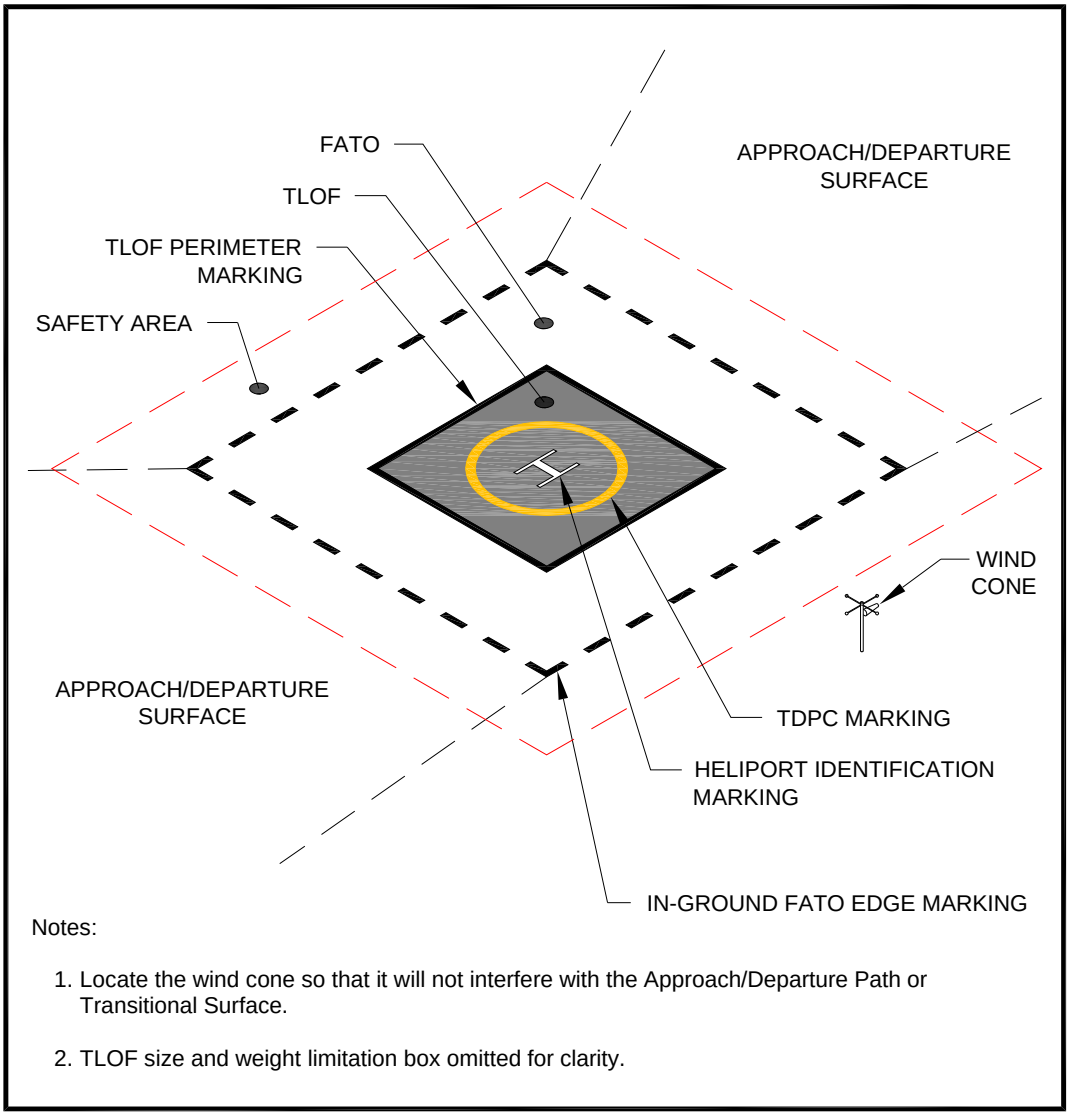


Figure 2–1. Essential Features of a Heliport: General Aviation

203. Prior permission required (PPR) facilities. The standards in this AC are recommended for all heliports. As PPR heliports are never eligible for federal financial assistance, do not interpret any recommendation in this AC that is not required by federal law or regulation as mandatory for PPR heliports. Recommendations for PPR heliports are provided in recognition of the unique nature of facilities where the operator ensures pilots are thoroughly familiar with the heliport, its procedures, and any facility limitations.

204. Access by individuals with disabilities. Various laws require heliports operated by public entities and those receiving federal financial assistance to meet accessibility requirements. See paragraph 114.

205. Heliport site selection.

a. Long term planning. The FAA encourages public agencies and others planning to develop a general aviation heliport to consider the possible future need for instrument operations and expansion.

b. Property requirements. The property needed for a general aviation heliport depends upon the volume and types of users, size of helicopters, and the scope of amenities provided. Property needs for helicopter operators and for passenger amenities frequently exceed those for "airside" purposes.

c. Turbulence. Air flowing around and over buildings, stands of trees, terrain irregularities, etc. can create turbulence on ground-level and roof-top heliports that may affect helicopter operations. Where the FATO is located near the edge and top of a building or structure, or within the influence of turbulent wakes from other buildings or structures, assess the turbulence and airflow characteristics in the vicinity of, and across the surface of the FATO to determine if an air-gap between the roof, roof parapet or supporting structure, and/or some other turbulence mitigating design measure is necessary. FAA Technical Report FAA/RD-84/25, Evaluating Wind Flow around Buildings on Heliport Placement, addresses the wind's effect on helicopter operations. Take the following actions in selecting a site to minimize the effects of turbulence.

(1) Ground-level heliports. Features such buildings, trees, and other large objects can cause air turbulence and affect helicopter operations from sites immediately adjacent to them. Therefore, locate the landing and takeoff area away from such objects in order to minimize air turbulence in the vicinity of the FATO and the approach/departure paths.

(2) Elevated heliports. Establishing a 6 foot (1.8 m) or more air gap on all sides above the level of the roof will generally minimize the turbulent effect of air flowing over the roof edge. Keep air gaps free at all times of objects that would obstruct the airflow. If it is not practical to include an air gap or some other turbulence mitigating design measure where there is turbulence, operational limitations may be necessary under certain wind conditions. See paragraph 101.

d. Electromagnetic effects. Nearby electromagnetic devices, such as a large ventilator motor, elevator motor or other devices that consume large amounts of electricity may cause temporary aberrations in the helicopter magnetic compass and interfere with other onboard navigational equipment.

206. Basic layout. A basic heliport consists of a TLOF contained within a FATO. A safety area surrounds the FATO. Table 2-1 shows how the standards for safety area width vary as a function of heliport markings. The relationship of the TLOF to the FATO and the safety area is shown in Figure 2–2. A FATO contains only one TLOF. Provide appropriate approach/departure airspace to allow safe approaches to and departures from landing sites. To the extent feasible, align the preferred approach/departure path with the predominant winds. See paragraph 210.

Table 2-1. Minimum VFR Safety Area Width as a Function of General Aviation and PPR Heliport Markings

General aviation heliports	1/3 RD but not less than 20 ft (6 m)**	1/3 RD but not less than 30 ft (9 m)**	½D but not less than 20 ft (6 m)	½ D but not less than 30 ft (9 m)
PPR heliports	1/3 RD but not less than 10 ft (3 m) **	1/3 RD but not less than 20 ft (6 m)**	½ D but not less than 20 ft (6 m)	½ D but not less than 30 ft (9 m)
TLOF perimeter marked	Yes	Yes	No	No
FATO perimeter marked	Yes	Yes	Yes	Yes
Standard "H" marking	Yes	No	Yes	No

D: Overall length of the design helicopter
RD: Rotor diameter of the design helicopter
** Also applies when the FATO is not marked. Do not mark the FATO if (a) the FATO (or part of the FATO) is a non-load bearing surface and/or (b) the TLOF is elevated above the level of a surrounding load-bearing area.

207. Touchdown and liftoff area (TLOF).

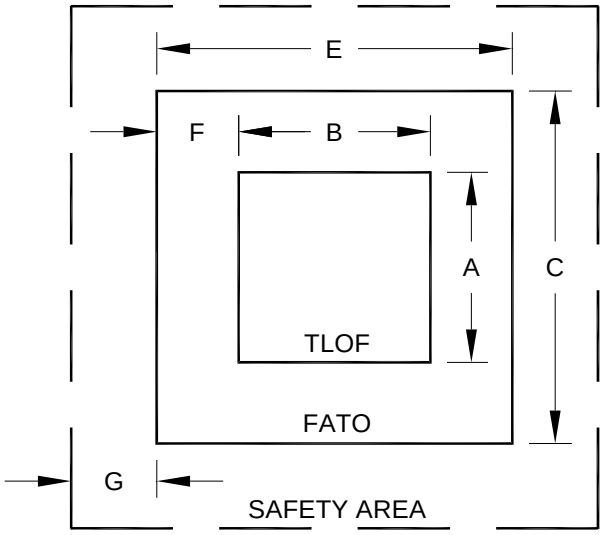
a. TLOF location. TLOFs of general aviation heliports are at ground level, on elevated structures, and at rooftop level. Center the TLOF within the FATO. At a PPR rooftop or other PPR elevated facility, where the entire FATO is not load-bearing, locating the TLOF in a load-bearing area (LBA) that is as large as possible may provide some operational advantages. In this case, locate the TLOF in the center of the LBA.

b. TLOF size. Design the TLOF so the minimum dimension (length, width, or diameter) is at least equal to the RD of the design helicopter (except as noted in (2) below). Design the TLOF to be rectangular or circular. Each has its advantages. A square or rectangular shape provides the pilot with better alignment cues than a circular shape, but a circular TLOF may be more recognizable in an urban environment. Increasing the LBA centered on the TLOF may provide some safety and operational advantages. At PPR facilities, if only a portion of the TLOF is paved, design the TLOF so the minimum length and width of this paved portion is not less than two times the maximum dimension (length or width) of the undercarriage of the design helicopter. Locate the center of the TLOF in the center of this paved portion. To avoid the risk of catching a skid and the potential for a dynamic rollover, make sure there is no difference in elevation between the paved and unpaved portions of the TLOF.

(1) Elevated public general aviation heliport. If the FATO outside the TLOF is not load-bearing, increase the minimum width, length or diameter of the TLOF to the overall length (D) of the design helicopter. See paragraph 207.b(3).

(2) Elevated PPR heliports. At PPR rooftop or elevated facilities where the height of the TLOF surface above the adjacent ground or structure is no greater than 30 inches (76 cm), and there is a solid adjacent ground or structure equal to the rotor diameter (RD) able to support 20 lbs/sq ft (98 kg/sq m) live load, design the minimum dimension of the TLOF to be at least the smaller of the RD and two times the maximum dimension (length or width) of the undercarriage of the design helicopter. Locate the center of the LBA of the TLOF in the center of the FATO.

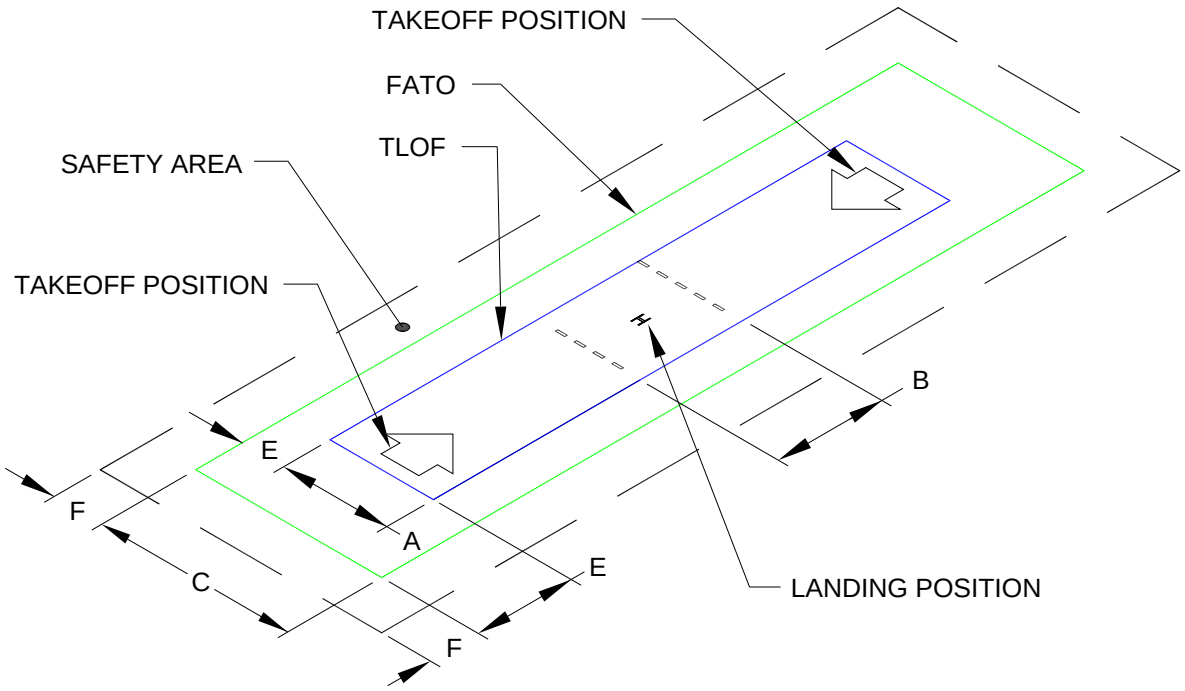
(3) Elongated TLOF. An elongated TLOF can provide an increased safety margin and greater operational flexibility. As an option, design an elongated TLOF with a landing position in the center and two takeoff positions, one at either end. Design the landing position to have a minimum length equal to the RD of the design helicopter. If the TLOF is elongated, also provide an elongated FATO. Figure 2–3 shows an elongated TLOF and an elongated FATO.



DIM	ITEM	VALUE	NOTES
A	Minimum TLOF Length	1 RD	
B	Minimum TLOF Width	1 RD	
C	Minimum FATO Length	1 ½ D	See Paragraph 207.a.(1) and Figure 2-5 for adjustments of elevations above 1000'
E	Minimum FATO Width	1 ½ D	
F	Minimum Separation Between the Perimeters of the TLOF and FATO	¾ D - ½ RD	
G	Minimum Safety Area Width	See Table 2-1	

Note: For a circular TLOF and FATO, dimensions A, B, C and E refer to diameters.

Figure 2–2. TLOF/FATO Safety Area Relationships and Minimum Dimensions: General Aviation



DIM	ITEM	VALUE	NOTES
A	Minimum TLOF Width	1 RD	
B	Minimum TLOF/Landing Position Length	1 RD	
C	Minimum FATO Width	1 ½ D	
E	Minimum Separation Between the Perimeters of the TLOF and FATO	¾ D - ½ RD	
F	Minimum Safety Area Width	See Table 2-1	

Note: For a circular TLOF and FATO, dimensions A, B, C and E refer to diameters.

Figure 2–3. Elongated FATO with Two Takeoff Positions: General Aviation

c. Ground-level TLOF surface characteristics.

(1) Design loads. Design the TLOF and any supporting TLOF structure to be capable of supporting the dynamic loads of the design helicopter.

(2) Paving. Provide either a paved or aggregate-turf surface for the TLOF (see AC 150/5370-10, Standards for Specifying Construction of Airports items P-217, Aggregate-Turf Pavement and P-501, Portland Cement Concrete Pavement). Use portland cement concrete (PCC) when feasible for ground-level facilities. An asphalt surface is less desirable for heliports as it may rut under the wheels or skids of

a parked helicopter. This has been a factor in some rollover accidents. Use a broomed or roughened pavement finish to provide a skid-resistant surface for helicopters and non-slippery footing for people. For PPR heliports where only a portion of the TLOF is paved, design the paved portion to dynamic load-bearing. Design the adjacent ground or structure of the TLOF for the static loads of the design helicopter.

d. Rooftop and other elevated TLOFs.

(1) Design loads. Design elevated TLOFs and any TLOF supporting structure to capable of supporting the dynamic loads of the design helicopter described in paragraph 707.b. An elevated heliport is illustrated in Figure 2–4.

(2) Elevation. Elevate the TLOF above the level of any obstacle in the FATO and safety area that cannot be removed.

(3) Obstructions. Elevator penthouses, cooling towers, exhaust vents, fresh-air vents, and other raised features can affect heliport operations. Establish control mechanisms to ensure obstruction hazards are not installed after the heliport is operational.

(4) Air quality. Helicopter exhaust can affect building air quality if the heliport is too close to fresh air vents. When designing a building intended to support a helipad, locate fresh air vents accordingly. When adding a heliport to an existing building, relocate fresh air vents if necessary or, if that is not practical, installing charcoal filters or a fresh air intake bypass louver system for HVAC systems may be adequate.

(5) TLOF surface characteristics. Construct rooftop and other elevated heliport TLOFs of metal or concrete (or other materials subject to local building codes). Use a finish for TLOF surfaces that provides a skid-resistant surface for helicopters and non-slippery footing for people.

(6) Safety net. If the platform is elevated 4 feet (1.2 m) or more above its surroundings, Title 29 CFR Part 1910.23, Guarding Floor and Wall Openings and Holes, requires the provision of fall protection. The FAA recommends such protection for all platforms elevated 30 inches (76 cm) or more. However, do not use permanent railings or fences since they would be safety hazards during helicopter operations. As an option, install a safety net meeting state and local regulations but not less than 5 feet (1.5 m) wide. Design the safety net to have a load carrying capability of 25 lbs/sq ft (122 kg/sq m). Make sure the net, as illustrated in Figure 2–28, does not project above the level of the TLOF. Fasten both the inside and outside edges of the safety net to a solid structure. Construct nets of materials that are resistant to environmental effects.

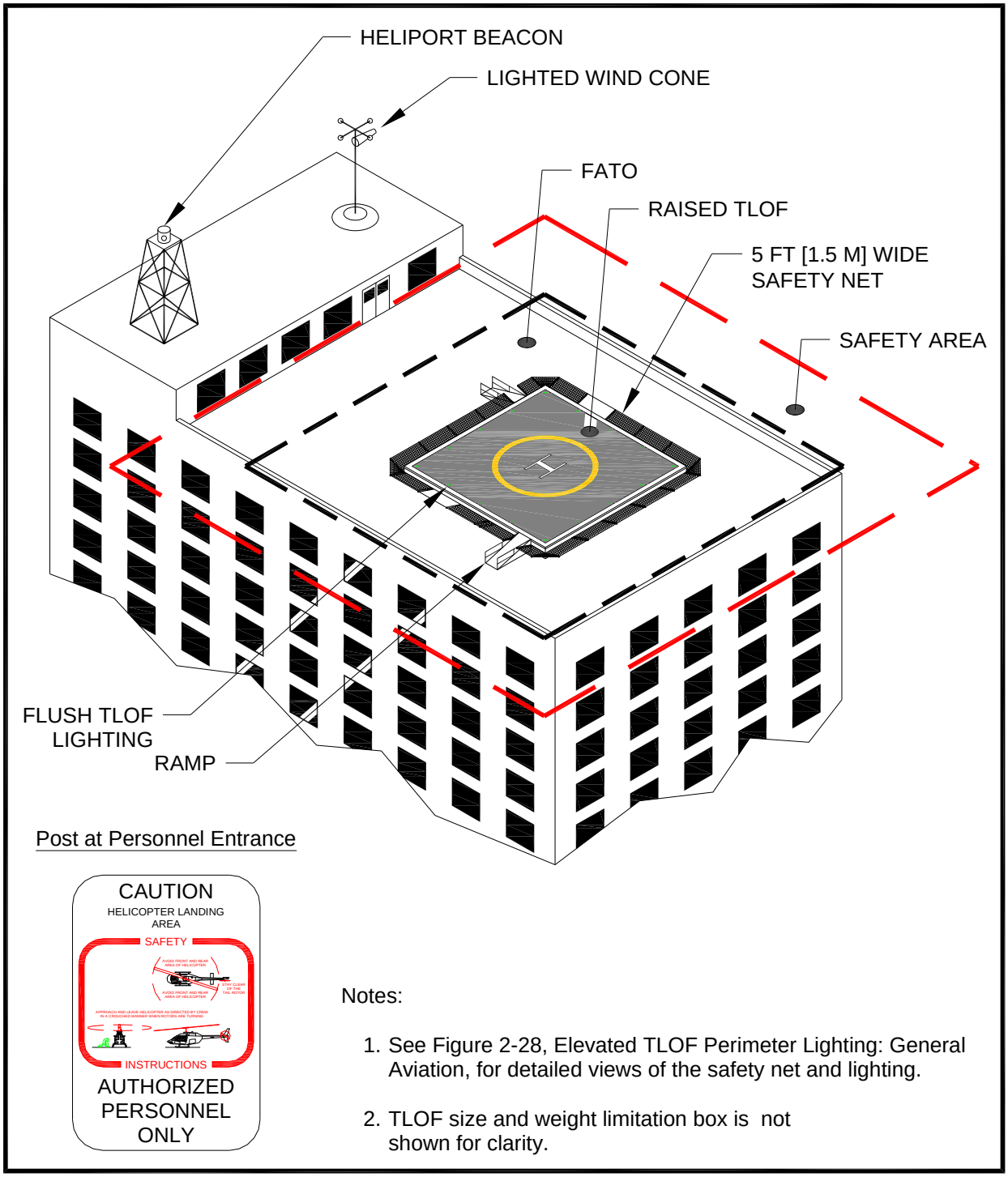


Figure 2–4. Elevated Heliport: General Aviation

(7) Access to elevated TLOFs. Title 29 CFR Part 1926.34, Means of Egress, requires two separate access points for an elevated structure such as one supporting an elevated TLOF. Title 29 CFR Part 1910.24, Fixed Industrial Stairs applies to stairs. Design handrails required by this regulation to fold down or be removable to below the level of the TLOF so they will not be hazards during helicopter operations.

e. TLOF gradients. See paragraph 702 for TLOF gradient standards.

208. Final approach and takeoff area (FATO). A general aviation heliport has at least one FATO. The FATO contains a TLOF within its borders at which arriving helicopters terminate their approach and from which departing helicopters take off.

a. FATO size.

(1) Design the minimum width, length, or diameter of a FATO to be at least 1.5 times the overall length (D) of the design helicopter. Design the FATO to be circular or rectangular, regardless of the shape of the TLOF. At elevations above 1,000 feet MSL, include a longer, rectangular FATO to provide an increased safety margin and greater operational flexibility. Use the additional FATO length depicted in Figure 2–5. Where the operator of a PPR heliport chooses not to provide additional FATO length, the operator makes sure that all pilots using the facility are thoroughly knowledgeable with this and any other facility limitations.

(2) Design the minimum distance between the TLOF perimeter and the FATO perimeter to be not less than the distance (¾ D - ½ RD) where D is the overall length and RD is the rotor diameter of the design helicopter. Note that if the TLOF and FATO are not of similar shape, this applies at all points of the TLOF perimeter. The relationship of the TLOF to the FATO and the safety area is shown in Figure 2–2.

b. FATO surface characteristics. If the heliport operator marks the TLOF, the FATO outside the TLOF need not load-bearing.

(1) Ground level public general aviation heliports. If the heliport operator does not mark the TLOF (see paragraph 215.a), and/or intends that the helicopter be able to land anywhere within the FATO, design the FATO outside the TLOF and any FATO supporting structure, like the TLOF, to be capable of supporting the dynamic loads of the design helicopter, as described in paragraph 707.b.

(2) Ground level PPR heliports. If the heliport operator does not mark the TLOF, and/or intends for the helicopter to be able to land anywhere within the FATO, design the FATO outside the TLOF and any FATO supporting structure, like the TLOF, to be capable of supporting the dynamic loads of the design helicopter, as described in paragraph 707.b.

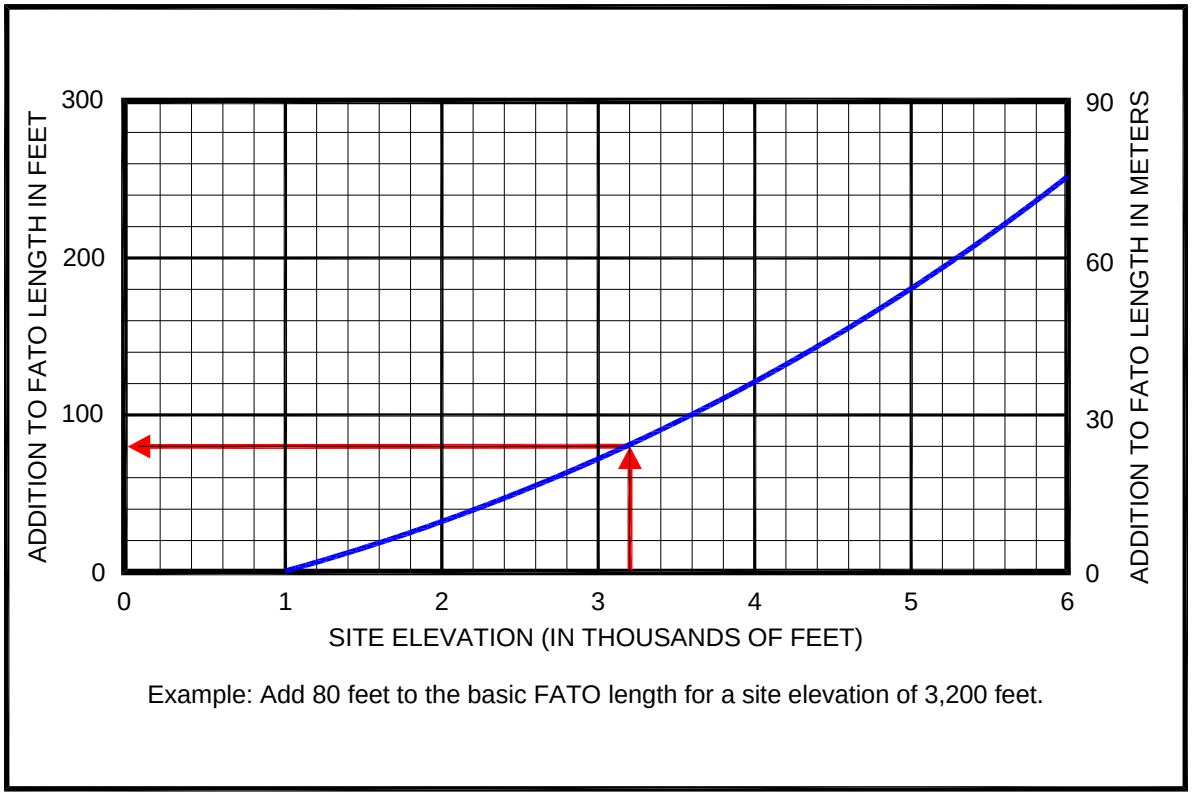


Figure 2–5. Additional FATO Length for Heliports at Higher Elevations: General Aviation

(3) Elevated heliports. As an option, design the FATO outside the TLOF to extend into clear airspace. However, there are some helicopter performance benefits and increased operational flexibility if the FATO outside the TLOF is load bearing. Design the FATO outside of the TLOF to be load-bearing, or increase the minimum width and length or diameter of TLOF to the overall length of the design helicopter.

(4) Elevated PPR heliports. For elevated PPR heliports, if the heliport operator intends to mark the TLOF, as an option design the FATO outside the TLOF and the safety area to extend into the clear airspace (see Figure 2–4). If the heliport operator does not mark the TLOF, and/or intends that the helicopter be able to land anywhere within the FATO, design the FATO outside the TLOF and any FATO supporting structure, like the TLOF, to support the dynamic loads of the design helicopter. As an option, increase the length and width or diameter of the LBA without a corresponding increase in the size of the FATO.

(5) If the FATO is load-bearing, design the portion abutting the TLOF to be contiguous with the TLOF, with the adjoining edges at the same elevation.

(6) If the FATO is unpaved, treat the FATO to prevent loose stones and any other flying debris caused by rotor downwash.

(7) When the FATO or the LBA in which it is located is elevated 4 feet (1.2 m) or more above its surroundings, part 1910.23 requires the provision of fall protection. The FAA recommends such protection for all platforms elevated 30 inches (76 cm) or more. However, do not use permanent railings or fences since they would be safety hazards during helicopter operations. As an option, install a safety net meeting state and local regulations but not less than 5 feet (1.5 m) wide. Design the safety net to have a load carrying capability of 25 lbs/sq ft (122 kg/sq m). Make sure the net, as illustrated in Figure 2–28,

does not project above the level of the TLOF. Fasten both the inside and outside edges of the safety net to a solid structure. Construct nets of materials that are resistant to environmental effects.

c. Mobile objects within the FATO. The FATO design standards of this AC assume the TLOF and FATO are closed to other aircraft if a helicopter or other mobile object is within the FATO or the safety area.

d. Fixed objects within the FATO. Remove all fixed objects projecting above the FATO elevation except for lighting fixtures, which may project a maximum of 2 inches (5 cm). See Figure 7–3. For ground level heliports, remove all above-ground objects to the extent practicable.

e. FATO/FATO separation. If a heliport has more than one FATO, separate the perimeters of the two FATOs so the respective safety areas do not overlap. This separation assumes simultaneous approach/departure operations will not take place. If the heliport operator intends for the facility to support simultaneous operations, provide a minimum 200 foot (61 m) separation.

f. FATO gradients. See paragraph 703 for FATO gradient standards.

209. Safety area. A safety area surrounds a FATO.

a. Safety area width. The standards for the width of the safety area are shown in Table 2-1. The value is the same on all sides. The provision or absence of standard heliport markings affects the width standards. As an option, design the safety area to extend into clear airspace.

b. Mobile objects within the safety area. The safety area design standards of this AC assume the TLOF and FATO are closed to other aircraft if a helicopter or other mobile object is within the FATO or the safety area.

c. Fixed objects within a safety area. Remove all fixed objects within a safety area projecting above the FATO elevation except for lighting fixtures, which may project a maximum of 2 inches (5 cm). See Figure 7–3. For ground level heliports, remove all above-ground objects to the extent practicable.

d. Safety area surface. The safety area need not be load bearing. Figure 2–6 depicts a safety area extending over water. If possible, design the portion of the safety area abutting the FATO to be contiguous with the FATO with the adjoining edges at the same elevation. This is needed to avoid the risk of catching a helicopter skid or wheel. Clear the safety area of flammable materials and treat the area to prevent loose stones and any other flying debris caused by rotor wash.

e. Safety area gradients. Find safety area gradient standards in Chapter 7.

210. VFR approach/departure paths. The purpose of approach/departure airspace, shown in Figure 2–7 and Figure 2–8 is to provide sufficient airspace clear of hazards to allow safe approaches to and departures from the TLOF.

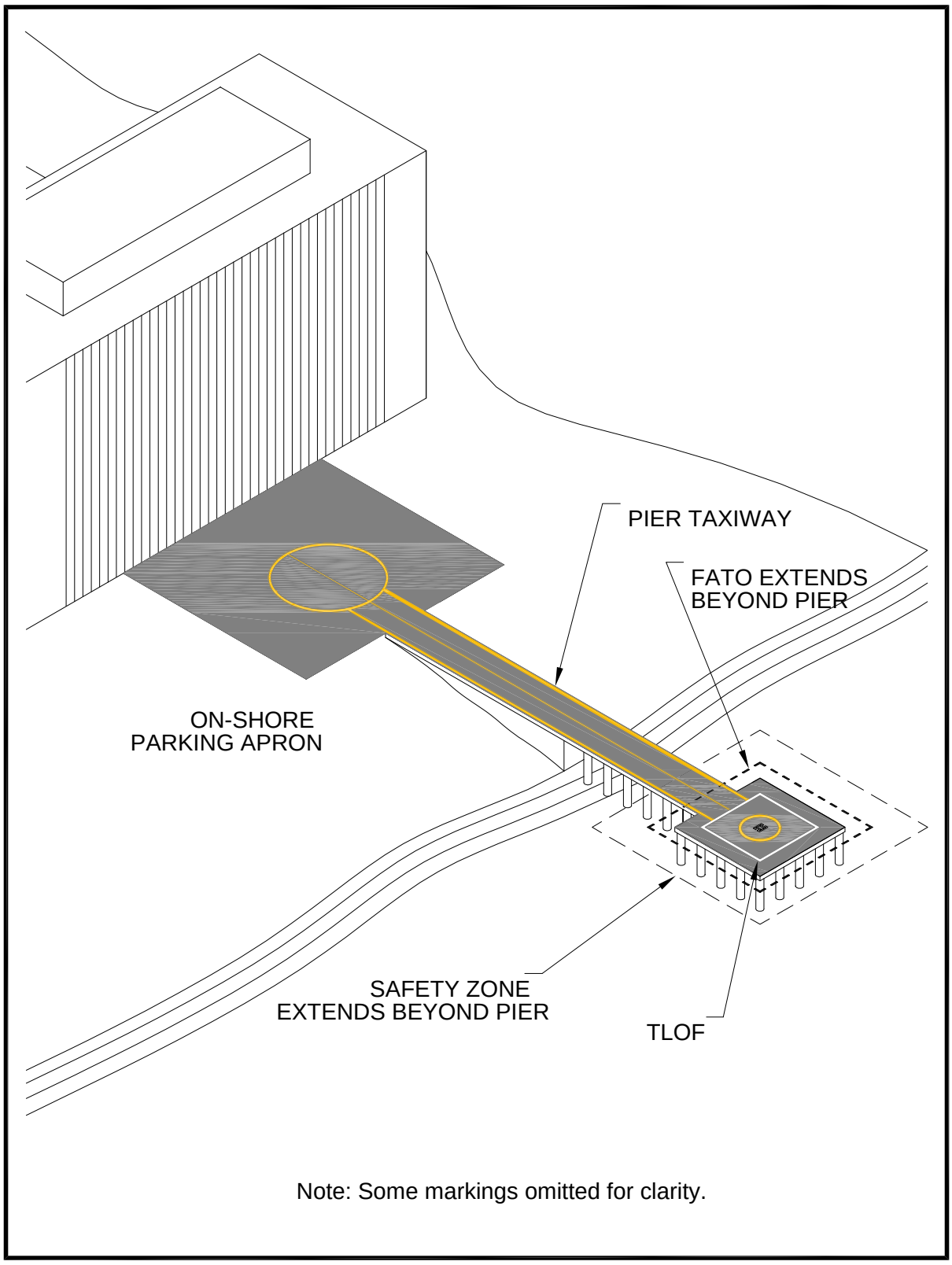


Figure 2–6. Non-load-bearing FATO and Safety Area: General Aviation

a. Number of approach/departure paths. Align preferred approach/departure paths with the predominant wind direction to avoid downwind operations and minimize crosswind operations. To accomplish this, design the heliport with more than one approach/departure path. Base other approach/departure paths on the assessment of the prevailing winds or, when this information is not available, separate such flight paths and the preferred flight path by at least 135 degrees. See Figure 2–7, Figure 2–8, and Figure 2–9. At a PPR heliport that has only one approach/departure path, the operator makes sure all pilots using the facility are thoroughly knowledgeable with this and any other facility limitations. A second flight path provides additional safety margin and operational flexibility. If it is not feasible to provide complete coverage of wind through multiple approach/departure paths, operational limitations maybe necessary under certain wind conditions. See paragraph 101.

b. VFR approach/departure and transitional surfaces. Figure 2–7 illustrates the approach/departure and transitional surfaces.

(1) An approach/departure surface is centered on each approach/departure path. The approach/departure path starts at the edge of the FATO and slopes upward at 8:1 (8 units horizontal in 1 unit vertical) for a distance of 4,000 feet (1,219 m) where the width is 500 feet (152 m) at a height of 500 feet (152 m) above the heliport elevation.

(2) The transitional surfaces start from the edges of the FATO parallel to the flight path center line, and from the outer edges of the 8:1 approach/departure surface, and extend outwards at a slope of 2:1 (2 units horizontal in 1 unit vertical) for a distance of 250 feet (76 m) from the centerline. The transitional surface does not apply to the FATO edge opposite the approach/departure surface.

(3) Make sure the approach/departure and transitional surfaces are free of penetrations unless an FAA aeronautical study determines such penetrations not to be hazards. The FAA conducts such aeronautical studies only at public heliports, heliports operated by a federal agency or the Department of Defense, and private airports with FAA-approved approach procedures. Paragraph 111 provides additional information on hazards to air navigation.

(4) At PPR facilities, an alternative to considering transitional surfaces is to increase the size of the 8:1 approach/departure surface for a distance of 2,000 feet (610 m) as shown in Figure 2–9 and Figure 2–11. The lateral extensions on each side of the 8:1 approach/departure surface start at the width of the FATO and are increased so at a distance of 2,000 feet (610 m) from the FATO they are 100 feet (30 m) wide. Make sure obstacles do not penetrate into both Area A and Area B. Make sure obstacles do not penetrate into Area A or Area B unless the FAA determines that the penetration is not a hazard. Mark or light all such penetrations. See paragraph 111 for more information on hazard determinations.

c. Curved VFR approach/departure paths. As an option, include one curve in VFR approach/departure paths. As an option, design these paths to use the airspace above public lands, such as freeways or rivers. When including a curved portion in the approach/departure path, make sure the sum of the radius of the arc defining the center line and the length of the straight portion originating at the FATO is not less than 1,886 feet (575 m). Design the approach/departure path so the minimum radius of the curve is 886 feet (270 m) and the curve follows a 1,000 feet (305 m) straight section. Design the approach/departure path so the combined length of the center line of the curved portion and the straight portion is 4,000 feet (1,219 m). See Figure 2–8. Figure 2–10 shows a curved approach/departure path for an 8:1 approach/departure surface.

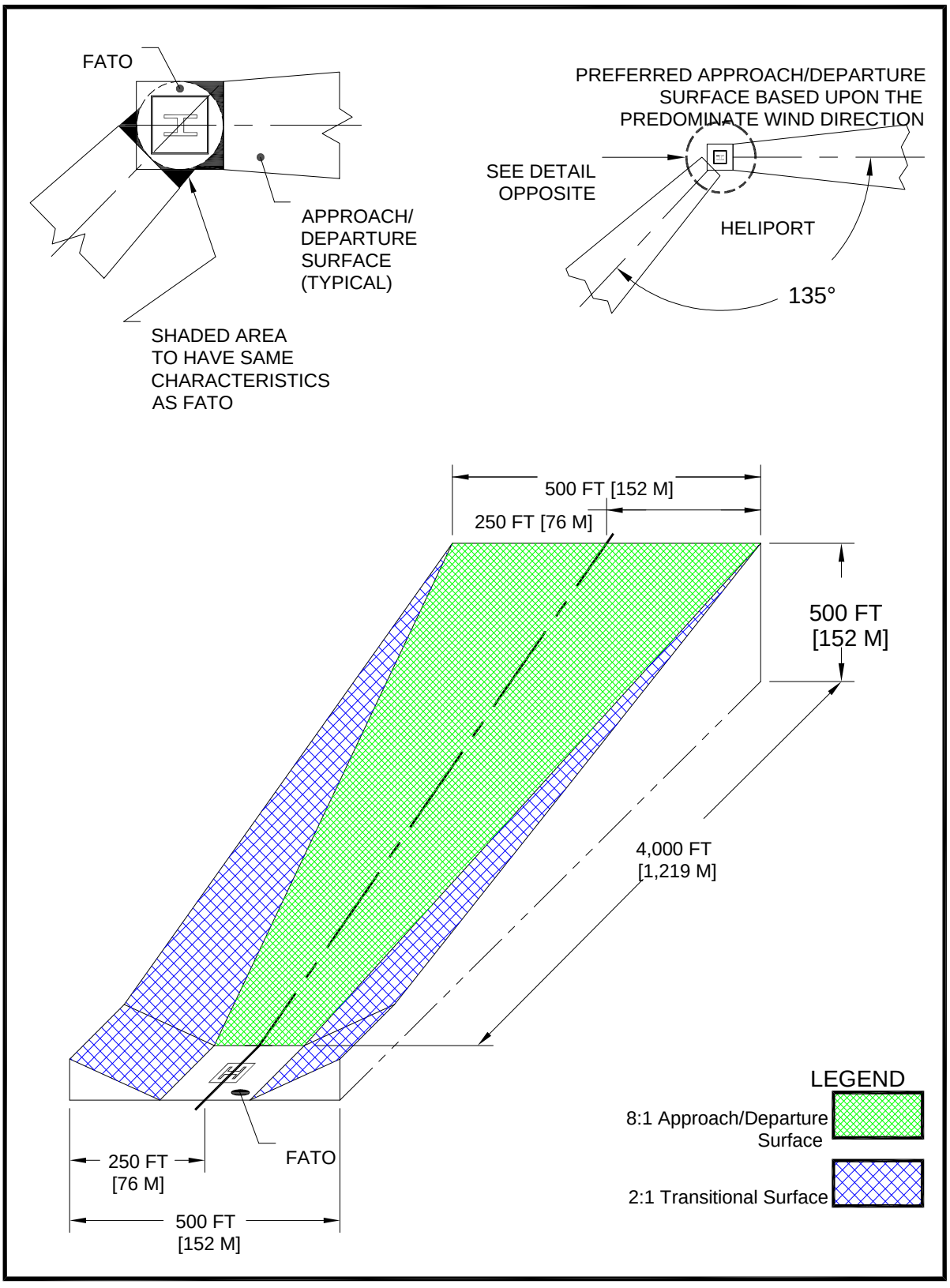
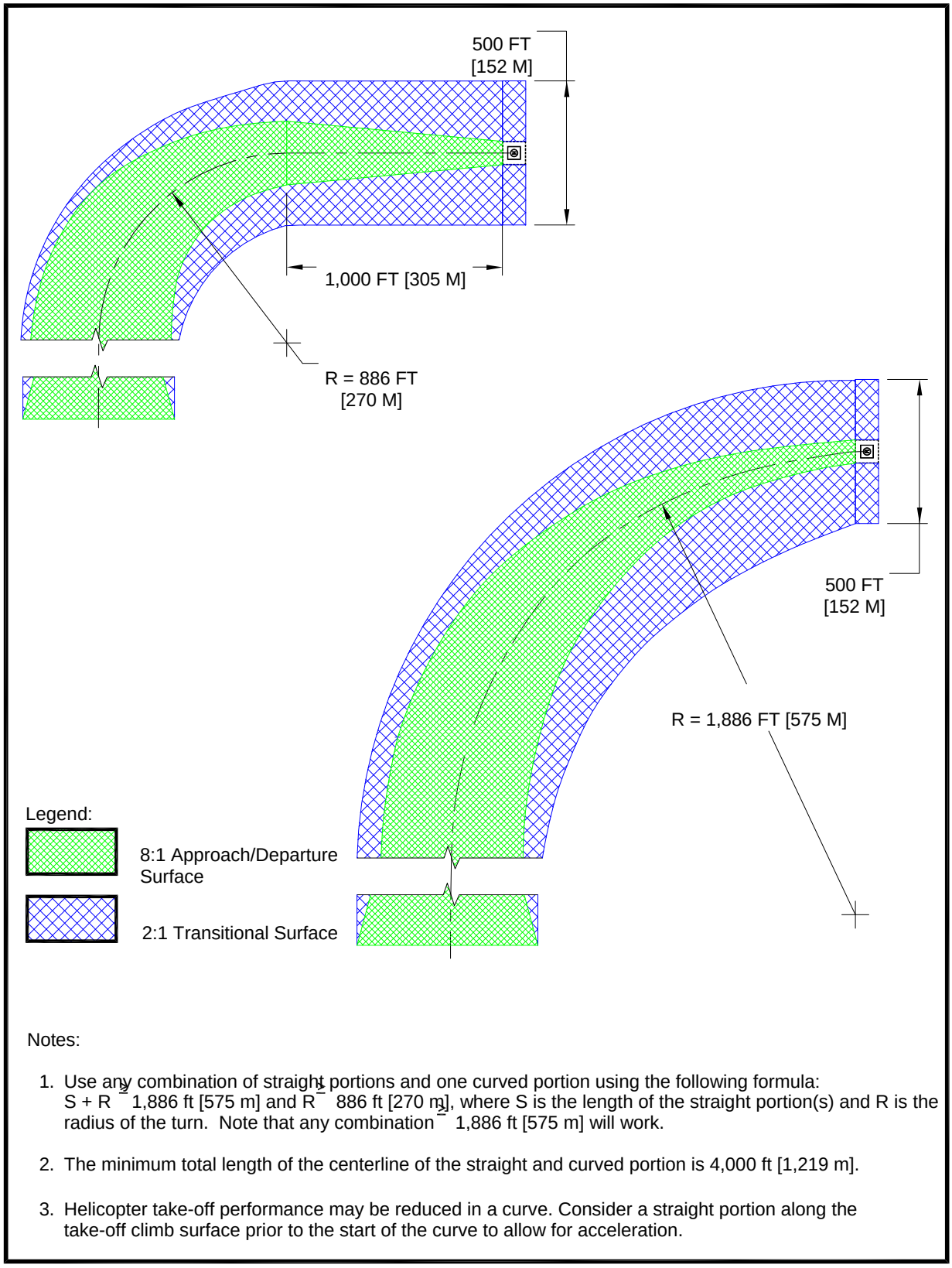


Figure 2–7. VFR Heliport Approach/Departure and Transitional Surfaces: General Aviation



Notes:

1. Use any combination of straight portions and one curved portion using the following formula: S + R ≥ 1,886 ft [575 m] and R ≥ 886 ft [270 m], where S is the length of the straight portion(s) and R is the radius of the turn. Note that any combination ≥ 1,886 ft [575 m] will work.
2. The minimum total length of the centerline of the straight and curved portion is 4,000 ft [1,219 m].
3. Helicopter take-off performance may be reduced in a curve. Consider a straight portion along the take-off climb surface prior to the start of the curve to allow for acceleration.

Figure 2–8. Curved Approach/Departure: General Aviation

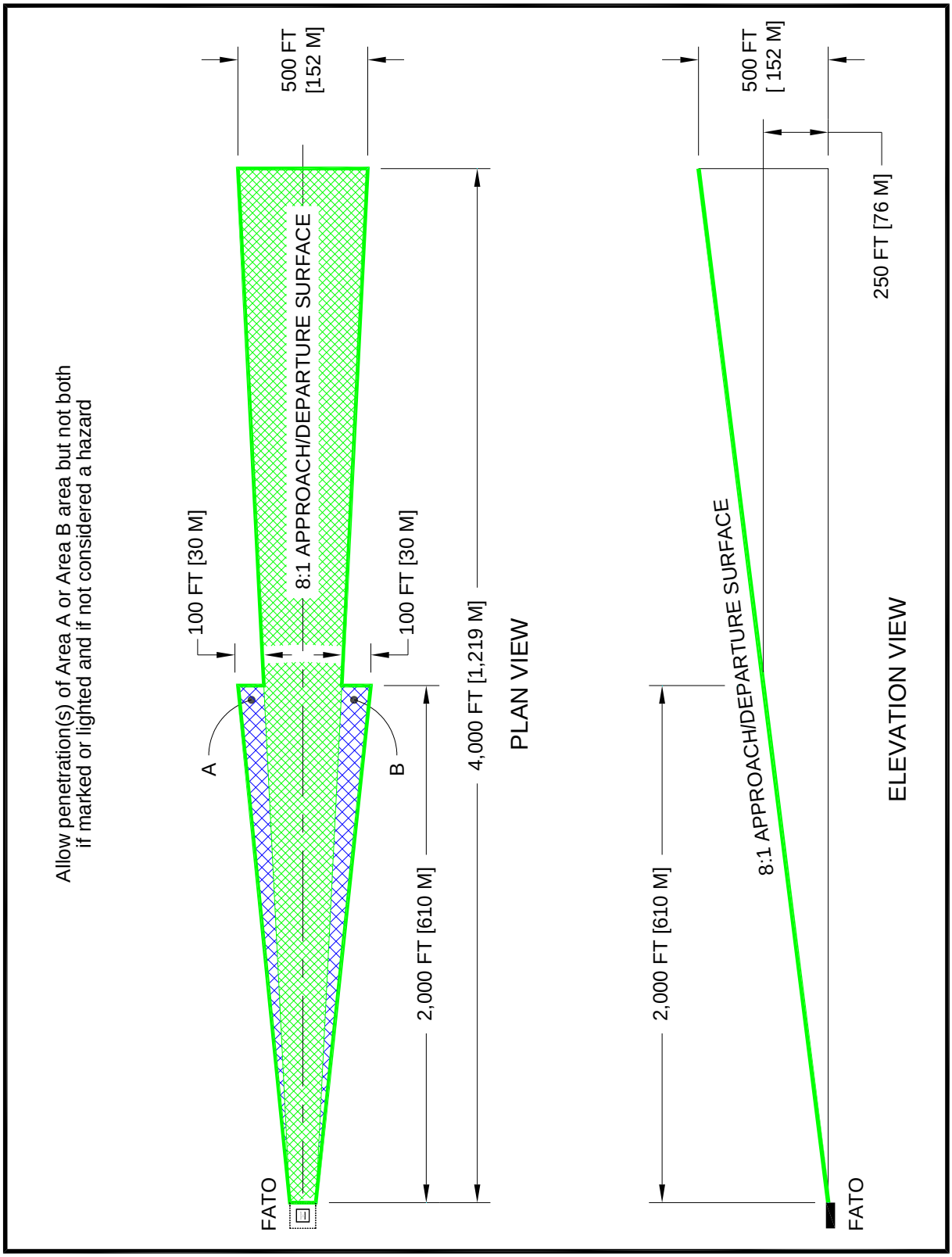
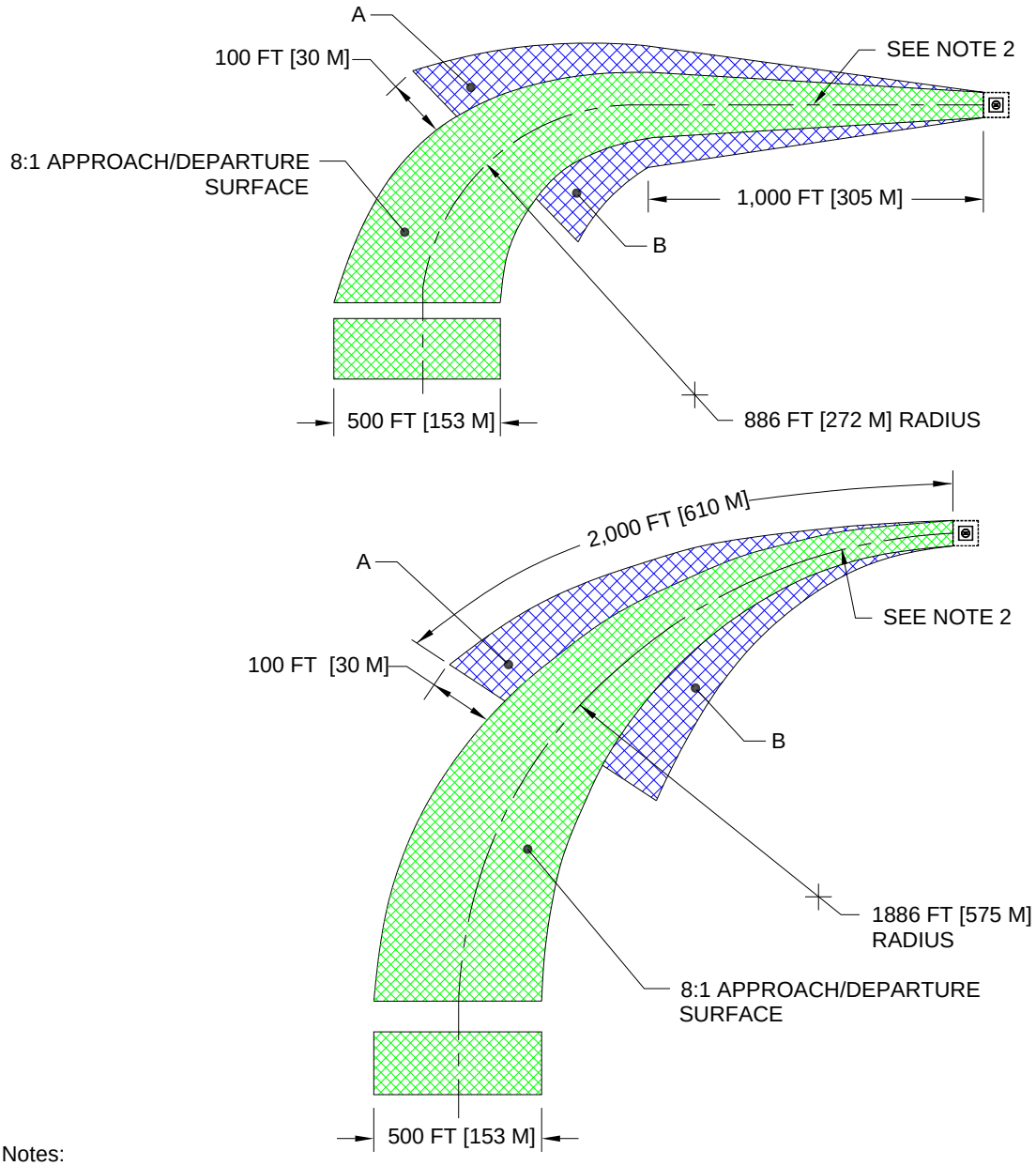


Figure 2–9. VFR PPR Heliport Lateral Extension of the 8:1 Approach / Departure Surface: General Aviation



Notes:

1. The approach surface may consist of one curved portion preceded and/or followed by one straight portion such that: S + R ≥1,886 ft [575 m] and R ≥886 ft [270 m], where S is the length of the straight portion(s) and R is the radius of the turn. Note that any combination ≥1,886 ft [575 m] will work.

2. The minimum total length of the centerline of the straight and curved portions is 4,000 ft [1,219 m].

3. Helicopter take-off performance may be reduced in a curve. Consider a straight portion along the take-off climb surface prior to the start of the curve to allow for acceleration.

4. Allow penetration(s) of Are a A or Area B area but not both if marked or lighted and if not considered a hazard.

Figure 2–10. VFR PPR Heliport Lateral Extension of the Curved 8:1 Approach / Departure Surface: General Aviation

d. Flight path alignment guidance. As an option, use flight path alignment markings and/or flight path alignment lights (see paragraphs 215 and 216) where it is desirable and practicable to indicate available approach and/or departure flight path direction(s). See Figure 2–11.

e. Periodic review of obstructions. Vigilant heliport operators reexamine obstacles in the vicinity of approach/departure paths on at least an annual basis. This reexamination includes an appraisal of the growth of trees near approach and departure paths. Paragraph 111 provides additional information on hazards to air navigation. Pay particular attention to obstacles that need to be marked or lighted. It may be helpful to maintain a list of the GPS coordinates and the peak elevation of obstacles.

211. Heliport protection zone (HPZ). The FAA recommends the establishment of an HPZ for each approach/departure surface. The HPZ is the area under the 8:1 approach/departure surface starting at the FATO perimeter and extending out for a distance of 280 feet (85.3 m), as illustrated in Figure 2–12. The HPZ is intended to enhance the protection of people and property on the ground. This is achieved through heliport owner control over the HPZ. Such control includes clearing HPZ areas (and maintaining them clear) of incompatible objects and activities. The FAA discourages residences and places of public assembly in an HPZ. (Churches, schools, hospitals, office buildings, shopping centers, and other uses with similar concentrations of persons typify places of public assembly.) Do not locate hazardous materials, including fuel, in the HPZ.

212. Wind cone.

a. Specification. Use a wind cone conforming to AC 150/5345-27, Specification for Wind Cone Assemblies, to show the direction and magnitude of the wind. Use a color that provides the best possible color contrast to its background.

b. Wind cone location. Locate the wind cone so it provides the pilot with valid wind direction and speed information in the vicinity of the heliport under all wind conditions.

(1) At many landing sites, there may be no single, ideal location for the wind cone. At other sites, it may not be possible to site a wind cone at the ideal location. In such cases, install more than one wind cone in order to provide the pilot with all the wind information needed for safe operations.

(2) Place the wind cone so a pilot on the approach path can see it clearly when the helicopter is 500 feet (150 m) from the TLOF.

(3) Place the wind cone so pilots can see it from the TLOF.

(4) To avoid presenting an obstruction hazard, locate the wind cone(s) outside the safety area, and so it does not penetrate the approach/departure or transitional surfaces.

c. Wind cone lighting. At a heliport intended for night operations, illuminate the wind cone, either internally or externally, to ensure it is clearly visible.

213. Taxiways and taxi routes. Taxiways and taxi routes provide for the movement of helicopters from one part of a landing facility to another. They provide a connecting path between the FATO and a parking area. They also provide a maneuvering aisle within the parking area. A taxi route includes the taxiway plus the appropriate clearances needed on both sides. The relationship between a taxiway and a taxi route is illustrated in Figure 2–13, Figure 2–14, and Figure 2–15. At heliports with no parking or refueling area outside the TLOF(s), it is not necessary to provide a taxi route or taxiway.

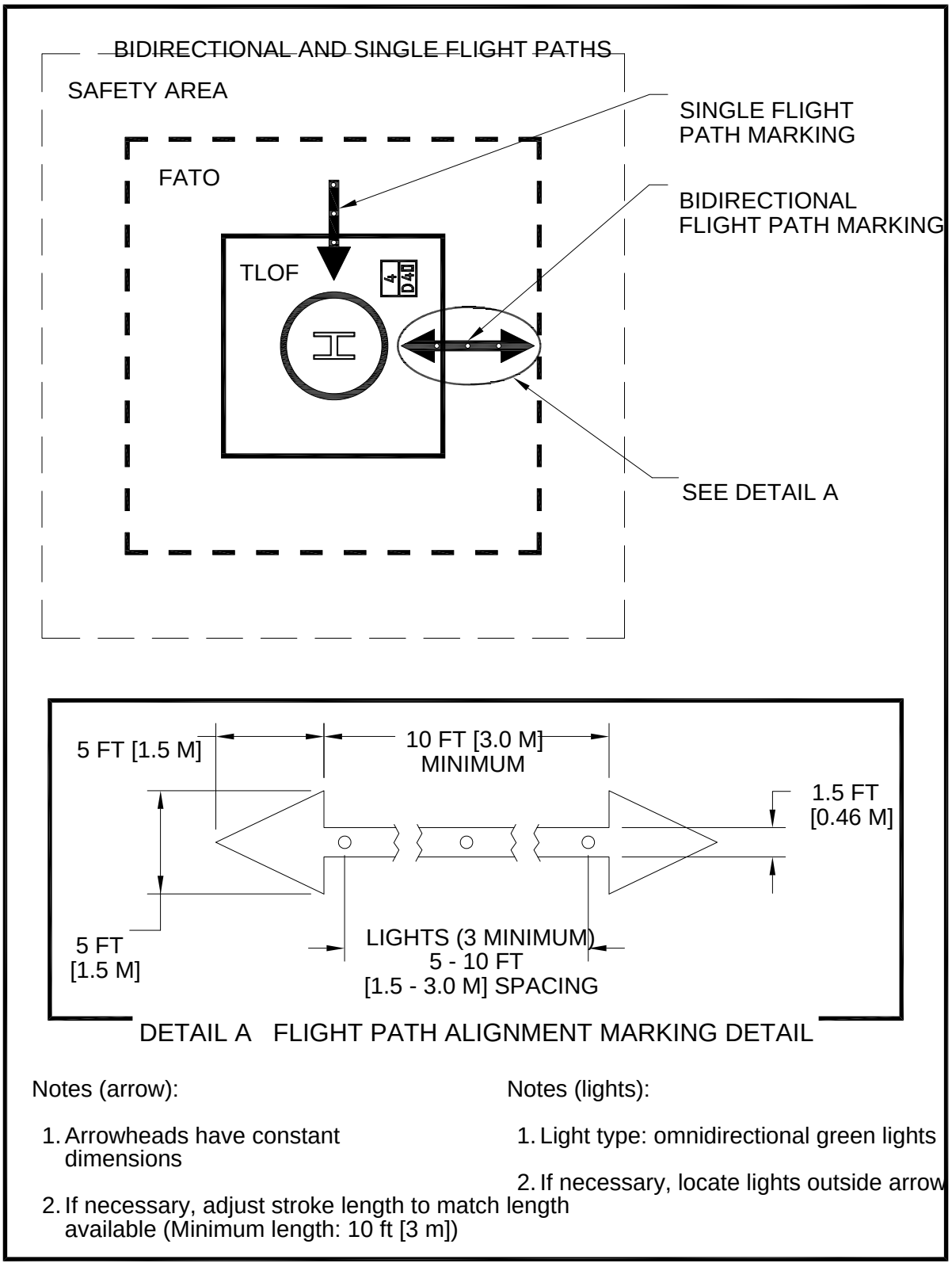


Figure 2–11. Flight Path Alignment Marking and Lights: General Aviation

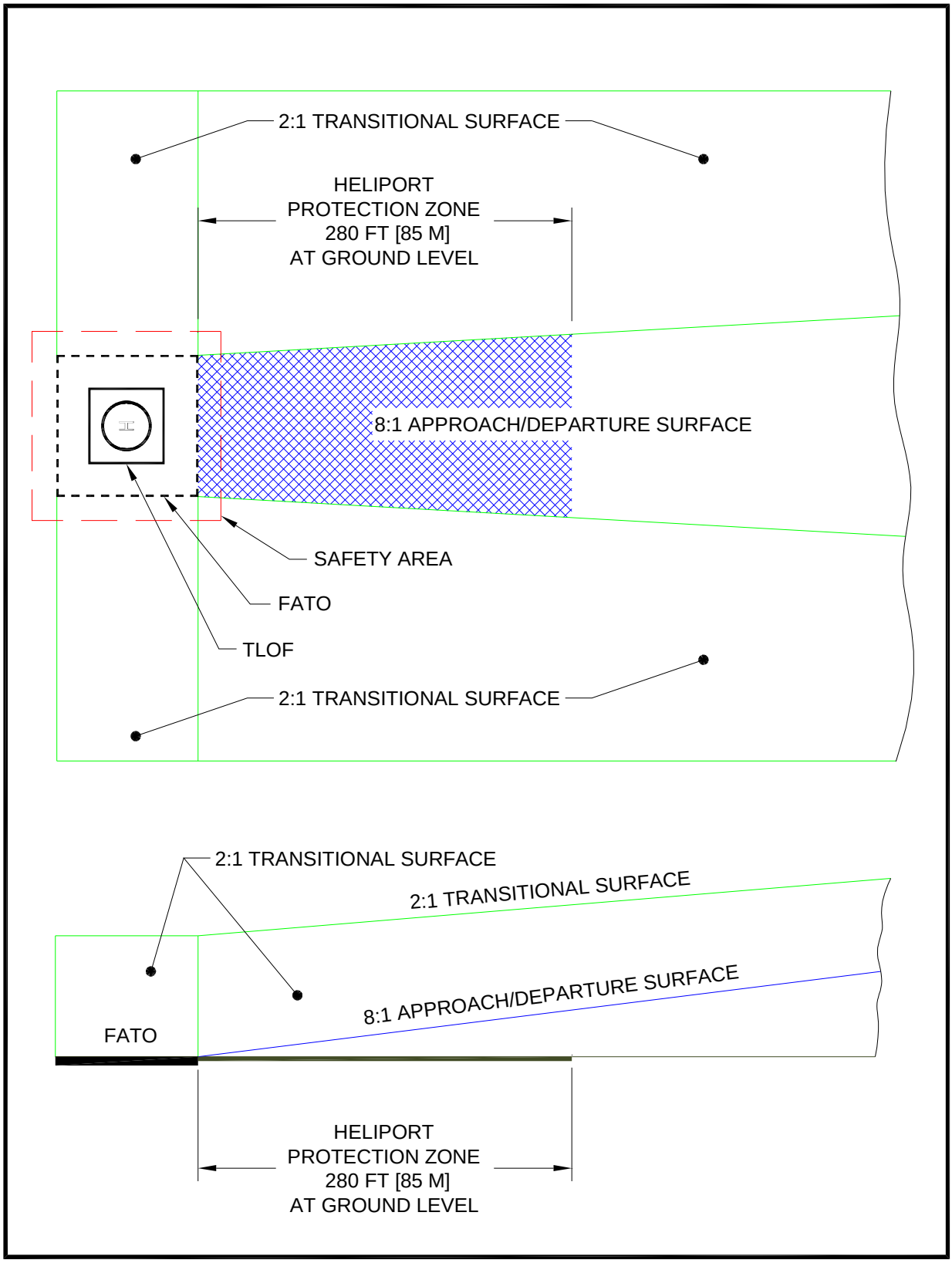


Figure 2–12. Heliport Protection Zone: General Aviation

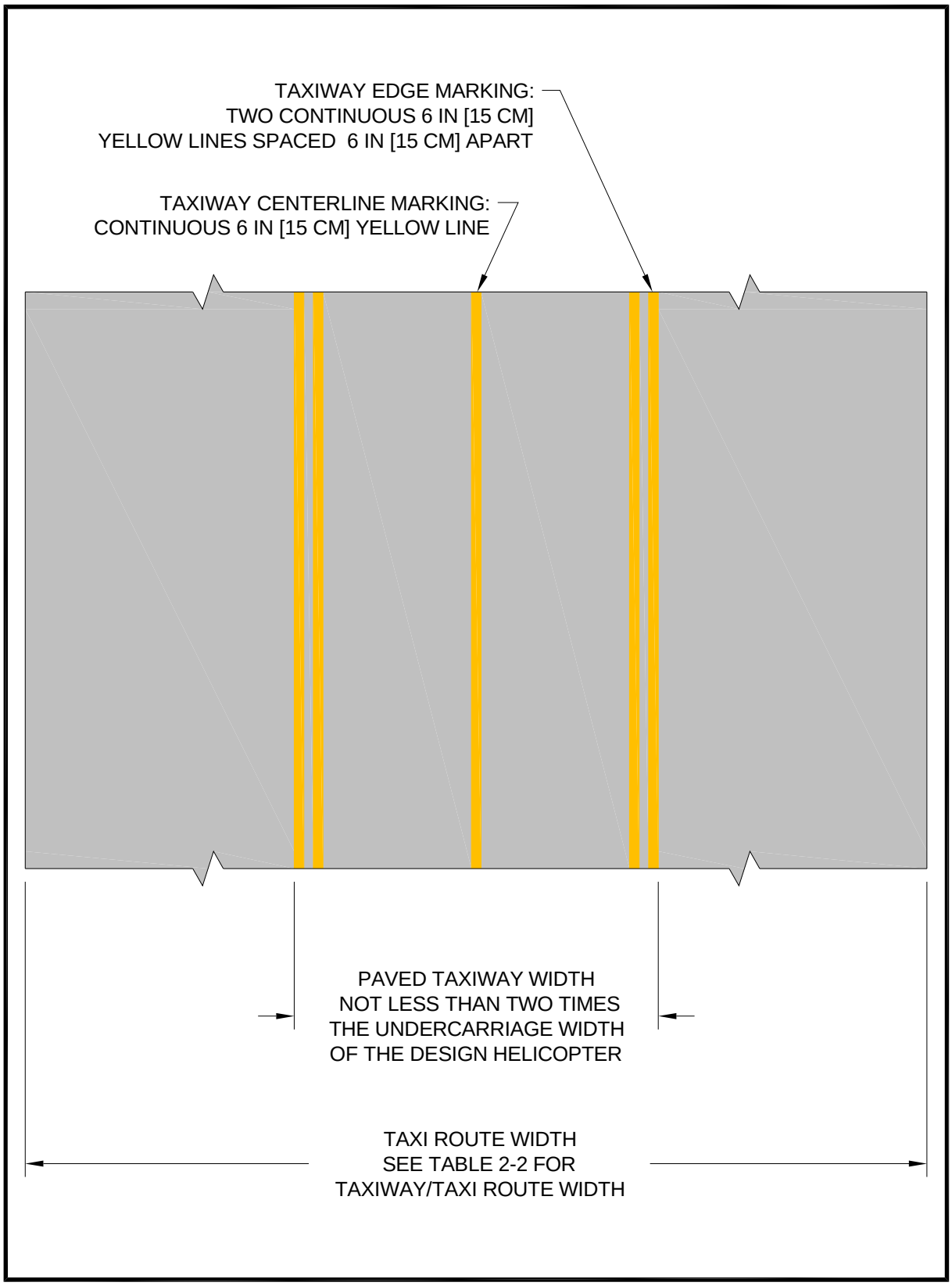


Figure 2–13. Taxiway/Taxi Route Relationship – Paved Taxiway: General Aviation

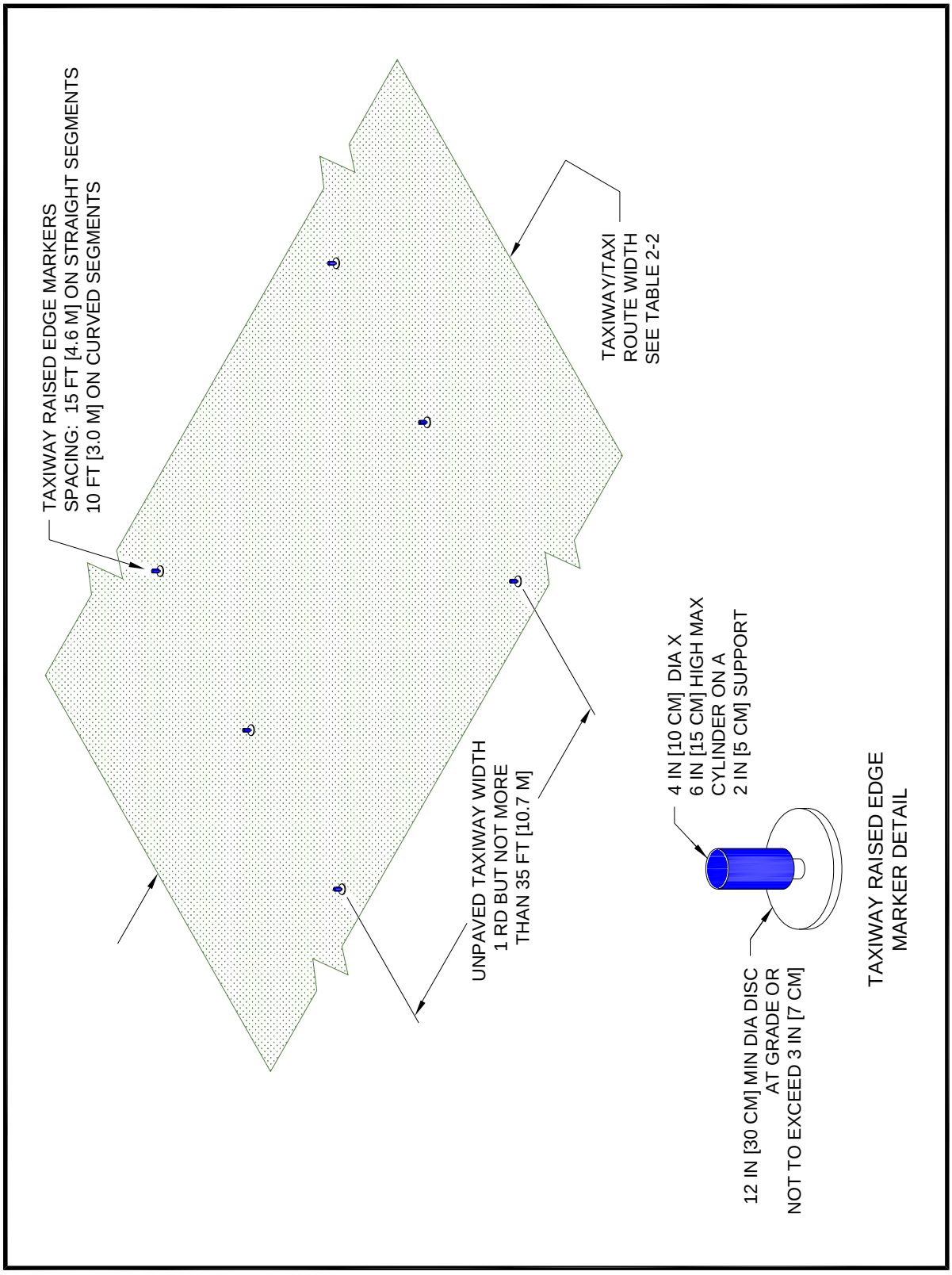


Figure 2–14. Taxiway/Taxi Route Relationship –
Unpaved Taxiway with Raised Edge Markers: General Aviation

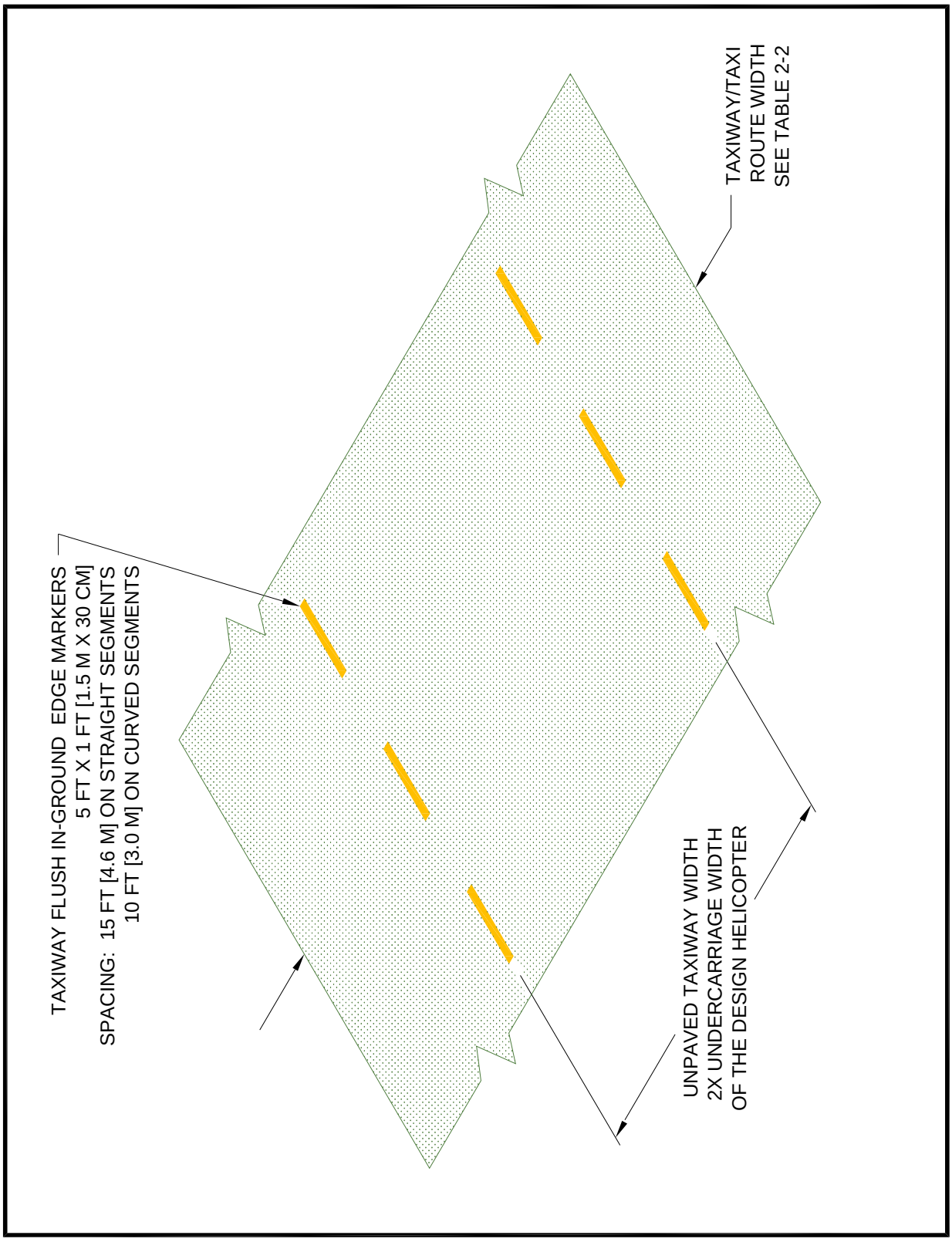


Figure 2–15. Taxiway/Taxi Route Relationship –
Unpaved Taxiway with Flush Edge Markers: General Aviation

a. Taxiway/taxi route widths. The dimensions of taxiways and taxi routes are a function of helicopter size, taxiway/taxi route marking, and type of taxi operations (ground taxi versus hover taxi). These dimensions are defined in Table 2-2. Normally, the requirement for hover taxi dictates the taxiway/taxi route widths. However, when the fleet comprises a combination of large ground taxiing helicopters and smaller air taxiing helicopters, the larger aircraft may dictate the taxiway/taxi route widths. If wheel-equipped helicopters taxi with wheels not touching the surface, design the facility with hover taxiway widths rather than ground taxiway widths. Where the visibility of the centerline marking cannot be guaranteed at all times, such as locations where snow or dust commonly obscure the centerline marking and it is not practical to remove it, determine the minimum taxiway/taxi route dimensions as if there was no centerline marking.

b. Surfaces. For ground taxiways, provide a portland cement concrete, asphalt, or stabilized surfaces, such as turf, in accordance with the standards of items P-217 of AC 150/5370-10. For unpaved portions of taxiways and taxi routes, provide a turf cover or treat the surface in some way to prevent dirt and debris from being raised by a taxiing helicopter's rotor wash.

c. Gradients. Taxiway and taxi route gradient standards are defined in Chapter 7.

214. Helicopter parking. If more than one helicopter at a time is expected at a heliport, design the facility with an area designated for parking helicopters. The size of this area depends on the number and size of specific helicopters to be accommodated. It is not necessary that every parking position accommodate the design helicopter. Construct individual parking positions to accommodate the helicopter size and weights expected to use the parking position at the facility. However, use the design helicopter to determine the separation between parking positions and taxi routes. Use the larger helicopter to determine the separation between parking positions intended for helicopters of different sizes. Build the parking positions to support the static loads of the helicopter intended to use the parking area. Design parking areas as one large, paved, apron or as individual, paved, parking positions. Ground taxi turns of wheeled helicopters are significantly larger than a hover turn. Consider the turn radius of helicopters when designing taxi intersections and parking positions for wheeled helicopters. Design heliport parking areas so helicopters will be parked in an orientation that keeps the "avoid areas" around the tail rotors clear of passenger walkways. See Figure 2–16, Figure 2–17, and Figure 2–19.

a. Location. Do not locate aircraft parking areas under an approach/departure surface. However, as an option, allow aircraft parking areas under the transitional surfaces.

(1) For "turn around" parking positions, locate the parking position to provide a minimum distance between the tail rotor circle and any object, building, safety area, or other parking position. The minimum distance is 10 feet (3 m) for ground taxi operations and the greater of 10 feet (3 m) or $^{1}/_{3}$ RD for hover taxi operations. See Figure 2–19.

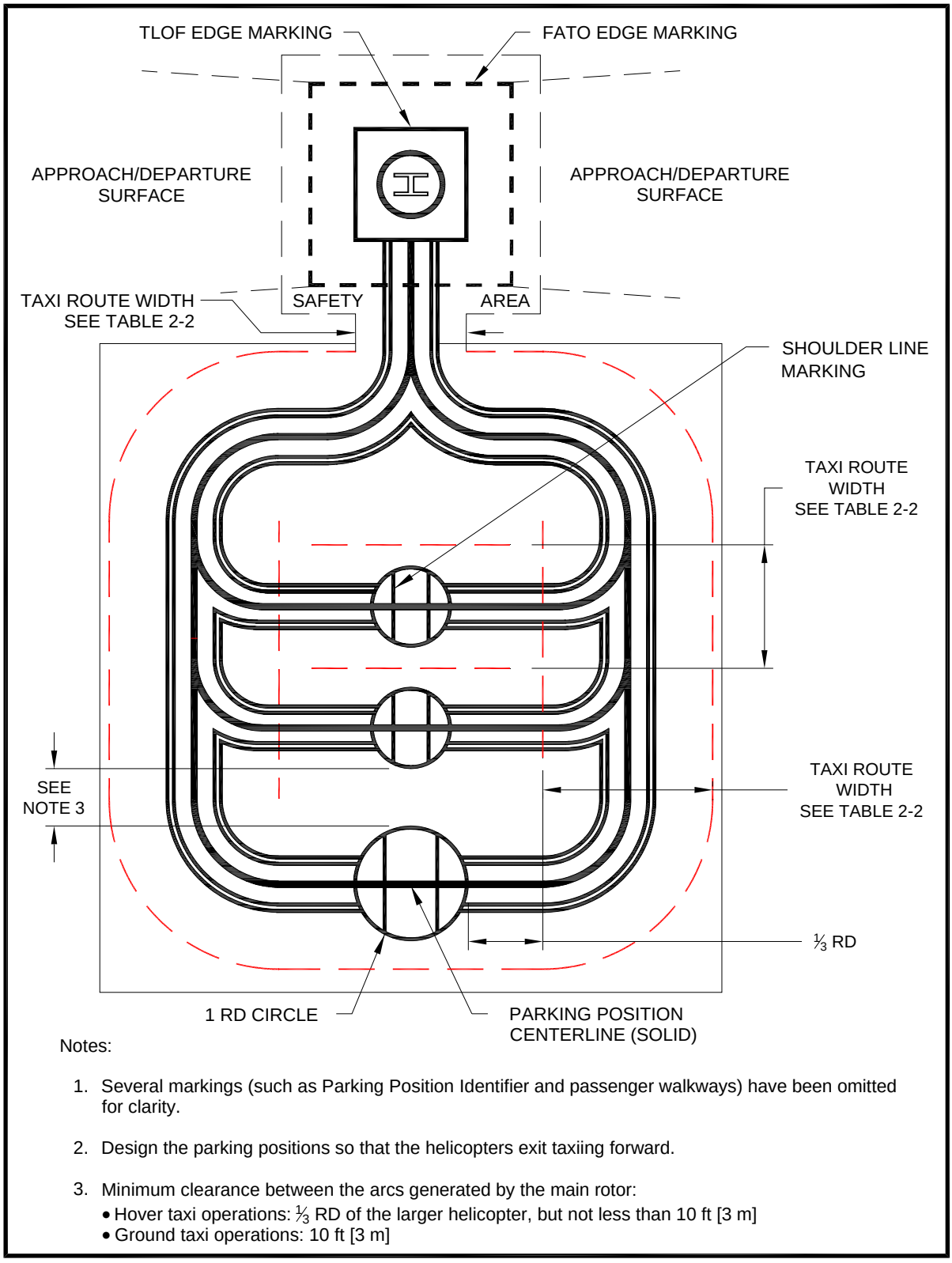
(2) For "taxi-through" and "back-out" parking positions, locate the parking position to provide a minimum distance between the main rotor circle and any object, building, safety area, or other parking position. The minimum distance is 10 feet (3 m) for ground taxi operations and the greater of 10 feet (3 m) or $^{1}/_{3}$ RD for hover taxi operations. See Figure 2–20.

(3) Locate the parking position to provide a minimum distance between the main rotor circle and the edge of any taxi route. Design parking positions such that the helicopter taxis through, turns around, or backs out to depart. The minimum distance is $^{1}/_{3}$ RD for "turn around" and "taxi through" parking areas, and ½ RD for "back-out" parking areas. See Figure 2–16, Figure 2–17, and Figure 2–18.

Table 2-2. Taxiway/Taxi Route Dimensions – General Aviation Heliports

Taxiway (TW) Type	Minimum Width of Paved Area	Centerline Marking Type	TW Edge Marking Type	Lateral Separation Between TW Edge Markings	Total Taxi Route Width
Ground Taxiway	2 x UC	Painted	Painted	2 x UC	1 ½ RD
			Elevated	1 RD but not greater than 35 ft (10.7 m)	
	Unpaved but stabilized for ground taxi	None	Flush	2 x UC	
			Elevated	1 RD but not greater than 35 ft (10.7 m)	
Hover Taxiway	2 x UC	Painted	Painted	2 x UC	2 RD
	Unpaved	None	Elevated or Flush	1 RD but not greater than 35 ft (10.7 m)	

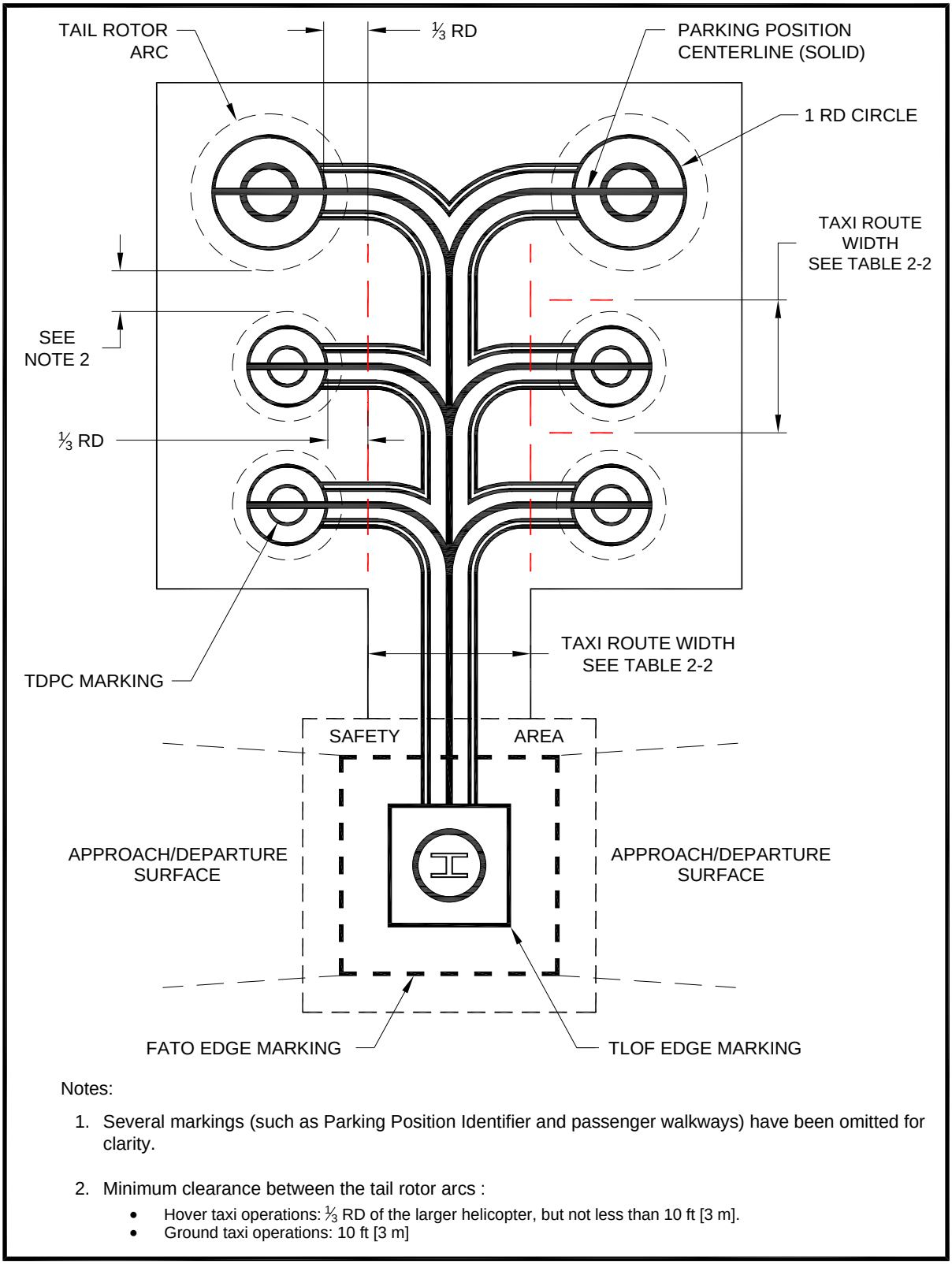
RD: rotor diameter of the design helicopter
TW: taxiway
UC: undercarriage length or width (whichever is greater) of the design helicopter



Notes:

1. Several markings (such as Parking Position Identifier and passenger walkways) have been omitted for clarity.
2. Design the parking positions so that the helicopters exit taxiing forward.
3. Minimum clearance between the arcs generated by the main rotor:
   - Hover taxi operations: ⅓ RD of the larger helicopter, but not less than 10 ft [3 m]
   - Ground taxi operations: 10 ft [3 m]

Figure 2–16. Parking Area Design – "Taxi-through" Parking Positions: General Aviation

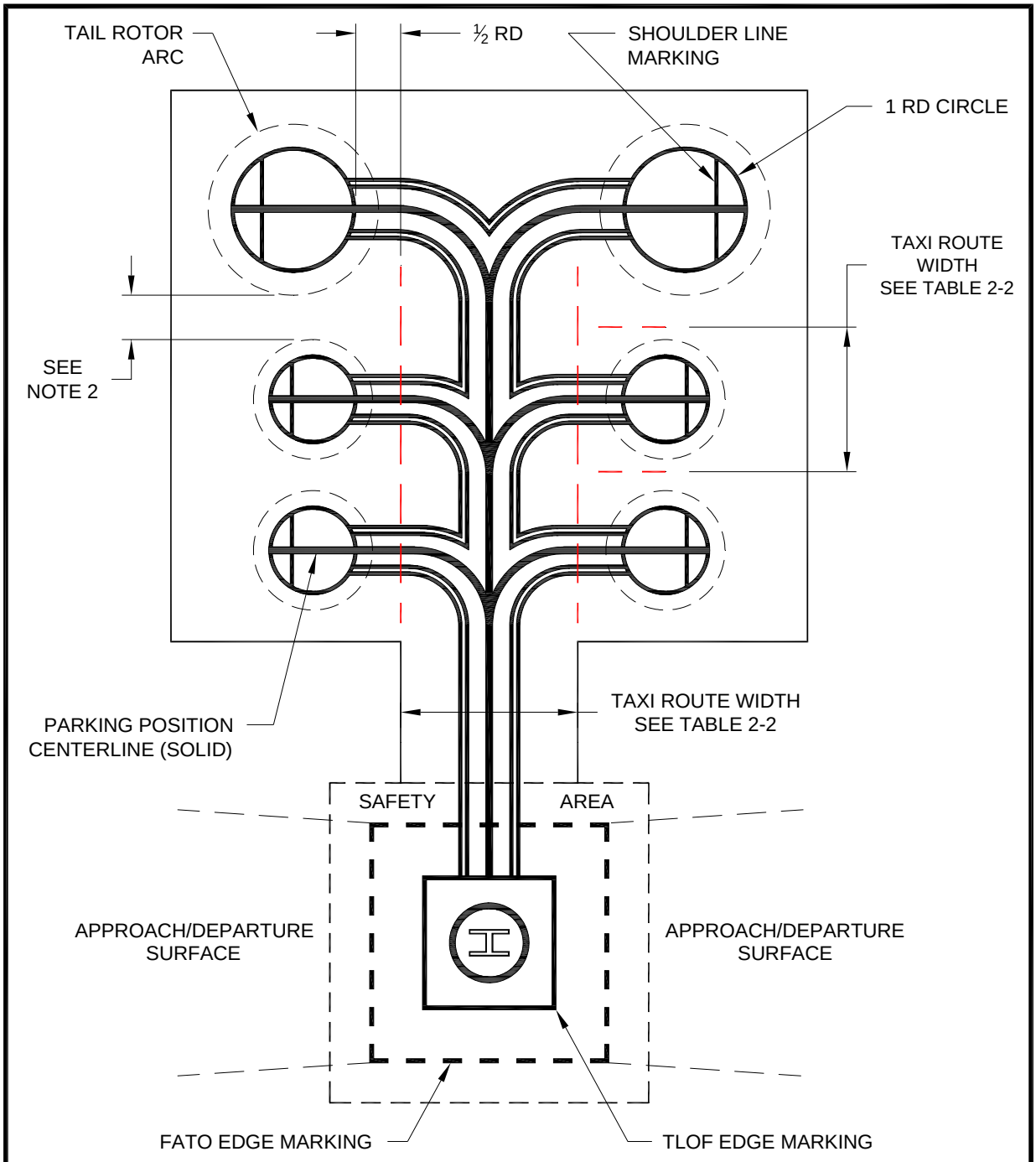


Notes:

1. Several markings (such as Parking Position Identifier and passenger walkways) have been omitted for clarity.

2. Minimum clearance between the tail rotor arcs :
   - Hover taxi operations: ⅓ RD of the larger helicopter, but not less than 10 ft [3 m].
   - Ground taxi operations: 10 ft [3 m]

Figure 2–17. Parking Area Design – "Turn-around" Parking Positions: General Aviation

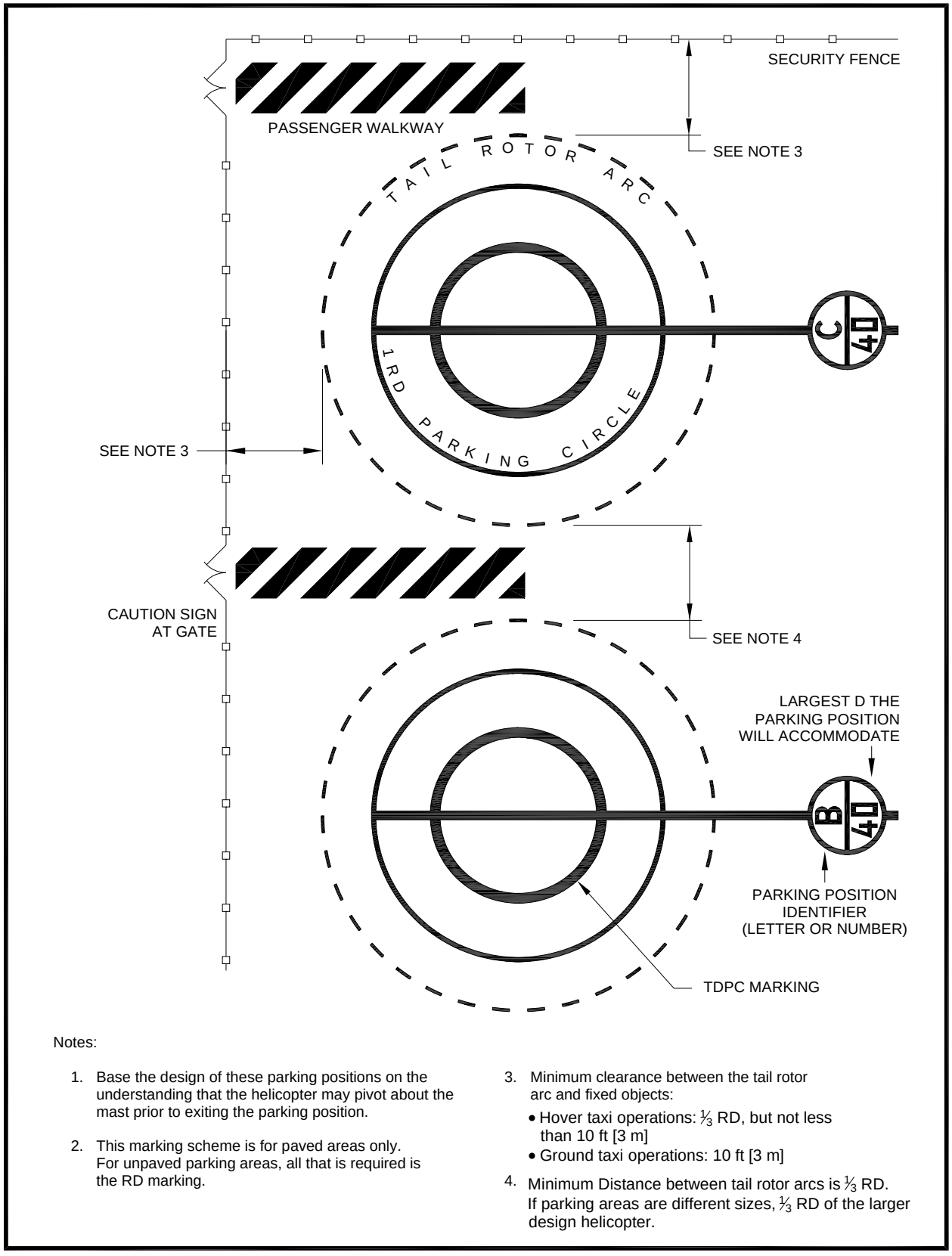


Notes:

1. Several markings (such as Parking Position Identifier and passenger walkways) have been omitted for clarity.

2. Minimum clearance between the tail rotor arcs :
   - Hover taxi operations: ⅓ RD of the larger helicopter, but not less than 10 ft [3 m].
   - Ground taxi operations: 10 ft [3 m]

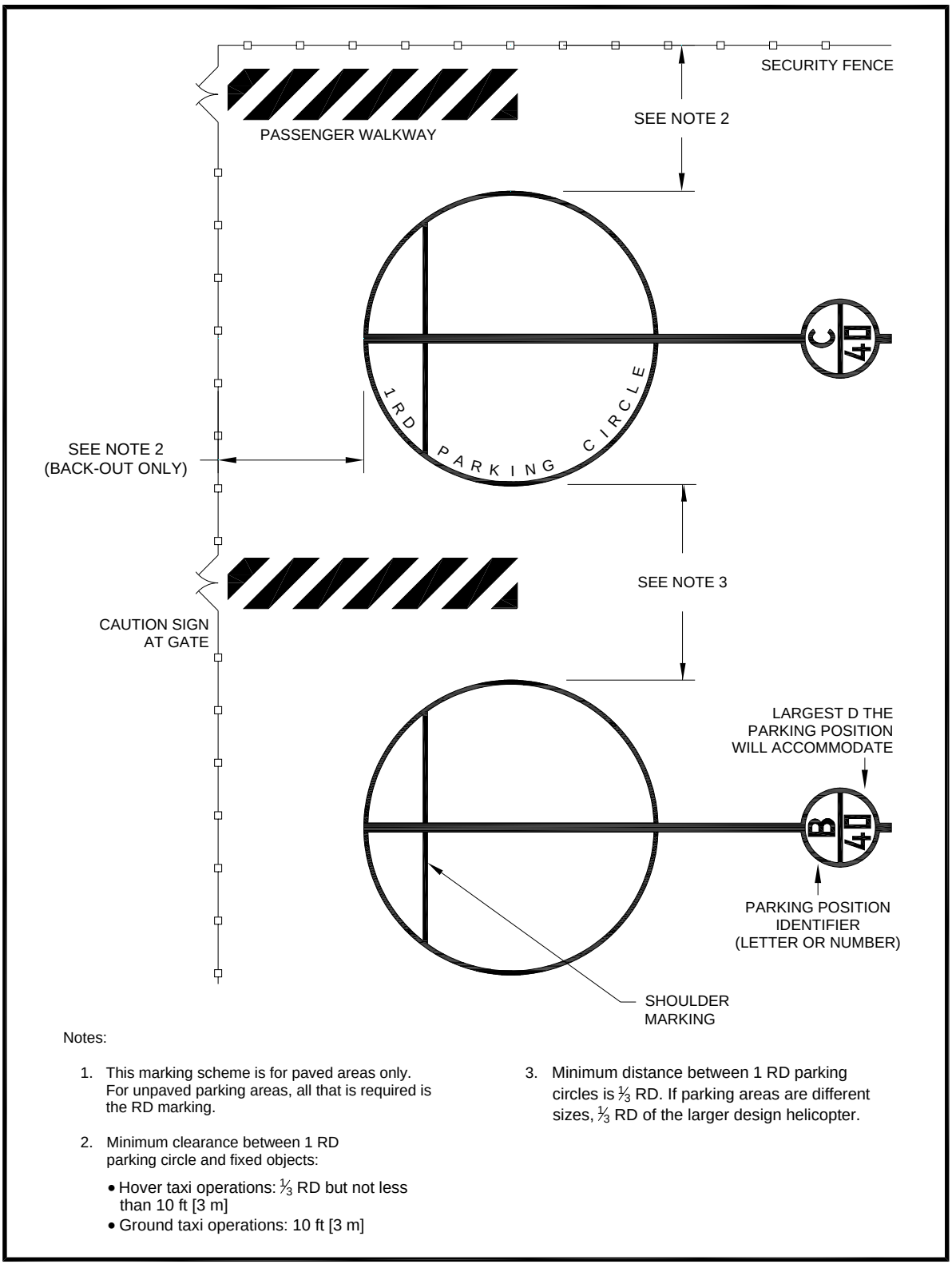
Figure 2–18. Parking Area Design – "Back-out" Parking Positions: General Aviation



Notes:

1. Base the design of these parking positions on the understanding that the helicopter may pivot about the mast prior to exiting the parking position.
2. This marking scheme is for paved areas only. For unpaved parking areas, all that is required is the RD marking.
3. Minimum clearance between the tail rotor arc and fixed objects:
   - Hover taxi operations: ⅓ RD, but not less than 10 ft [3 m]
   - Ground taxi operations: 10 ft [3 m]
4. Minimum Distance between tail rotor arcs is ⅓ RD. If parking areas are different sizes, ⅓ RD of the larger design helicopter.

Figure 2–19. “Turn-around” Parking Position Marking: General Aviation



Notes:

1. This marking scheme is for paved areas only. For unpaved parking areas, all that is required is the RD marking.
2. Minimum clearance between 1 RD parking circle and fixed objects:
   - Hover taxi operations: ⅓ RD but not less than 10 ft [3 m]
   - Ground taxi operations: 10 ft [3 m]
3. Minimum distance between 1 RD parking circles is ⅓ RD. If parking areas are different sizes, ⅓ RD of the larger design helicopter.

Figure 2–20. "Taxi-through" and "Back-out" Parking Position Marking: General Aviation

b. Size. Parking position sizes are dependent upon the helicopter size. The clearance between parking positions are dependent upon the type of taxi operations (ground taxi or hover taxi) and the intended paths for maneuvering in and out of the parking position. The more demanding requirement will dictate what is required at a particular site. Usually, the parking area requirements for skid-equipped helicopters will be the most demanding. However, when the largest helicopter is a very large, wheeled aircraft (for example, the S-61), and the skid-equipped helicopters are all much smaller, the parking requirements for wheeled helicopters may be the most demanding. If wheel-equipped helicopters taxi with wheels not touching the surface, design parking areas based on hover taxi operations rather than ground taxi operations.

(1) If all parking positions are the same size, design them to accommodate the largest helicopter that will park at the heliport.

(2) When there is more than one parking position, as an option design the facility with parking positions of various sizes with at least one position that will accommodate the largest helicopter that will park at the heliport. Design other parking positions to be smaller, for the size of the individual or range of individual helicopters parking at that position. Figure 2–21 provides guidance on parking position identification, size, and weight limitations.

(3) "Taxi-through" parking positions are illustrated in Figure 2–16. When using this design for parking positions, the heliport owner and operator take steps to ensure all pilots are informed that "turn-around" or "back-up" departures from the parking position are not permitted.

(4) "Turn-around" parking positions are illustrated in Figure 2–17.

(5) "Back-out" parking positions are illustrated in Figure 2–18. When using this design for parking positions, design the adjacent taxiway to accommodate hover taxi operations so the width of the taxiway will be adequate to support "back-out" operations.

c. Parking pads. When partially paving a parking area, design the smallest dimension of the paved parking pad to be a minimum of two times the maximum dimension (length or width, whichever is greater) of the undercarriage or the RD, whichever is less, of the largest helicopter that will use the parking position. Place the parking pad in the center of the parking position circle**.**

d. Walkways. At parking positions, provide marked walkways where practicable. Design the pavement to drain away from walkways.

e. Fueling. Design the facility to allow fueling with the use of a fuel truck or a specific fueling area with stationary fuel tanks.

(1) Various federal, state, and local requirements for petroleum handling facilities apply to systems for storing and dispensing fuel. Guidance is found in AC 150/5230-4, Aircraft Fuel Storage, Handling, and Dispensing on Airports. Additional information may be found in various National Fire Protection Association (NFPA) publications. For more reference material, see Appendix D.

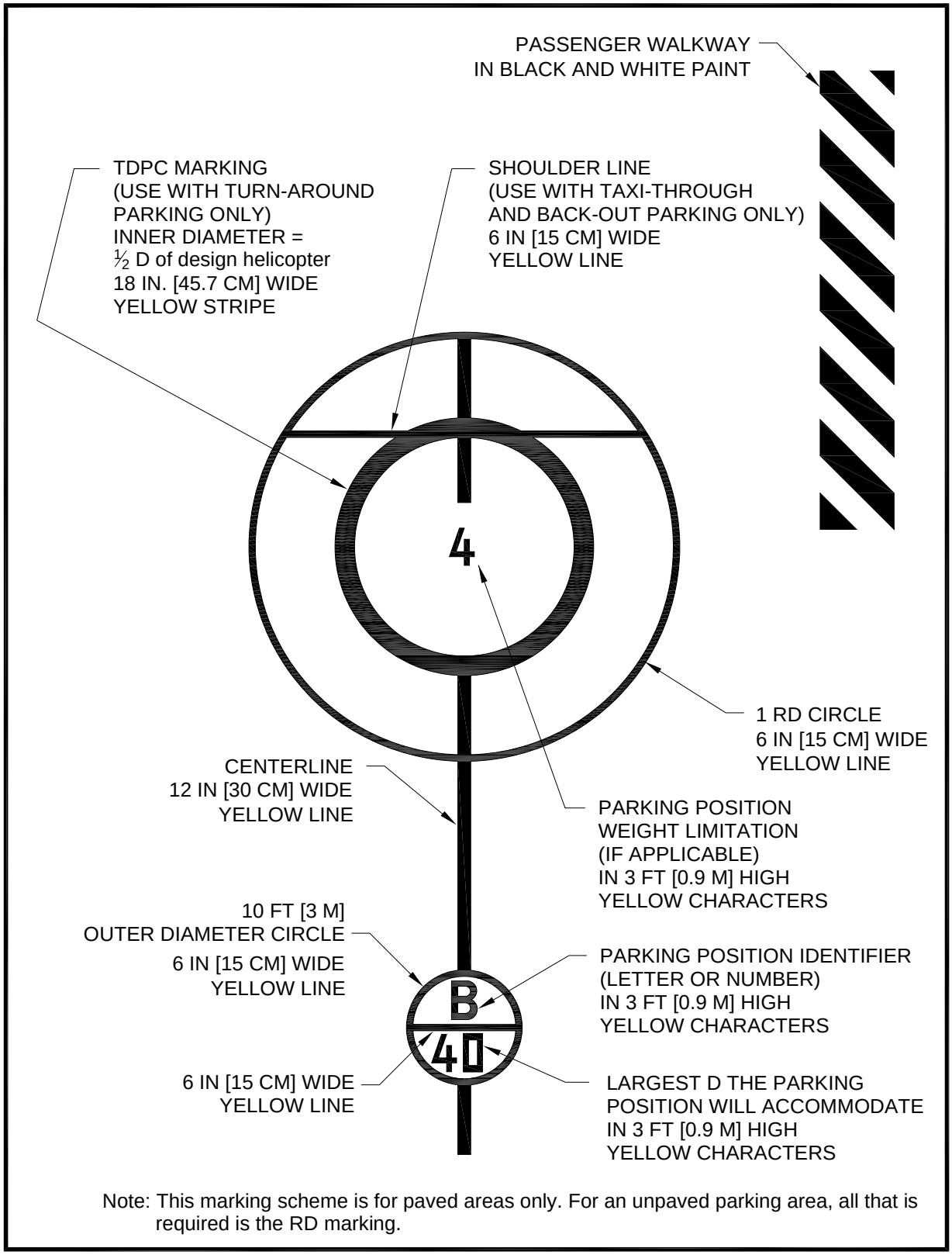


Figure 2–21. Parking Position Identification, Size, and Weight Limitations: General Aviation

(2) Do not locate fueling equipment in the TLOF, FATO, or safety area. Design and mark separate fueling locations to minimize the potential for helicopters to collide with the dispensing equipment. Design fueling areas so there is no object tall enough to be hit by the main or tail rotor blades within a distance of RD from the center point of the position where the helicopter would be fueled (providing ½ RD clearance from the rotor tips). If this is not practical at an existing facility, install long fuel hoses.

(3) Lighting. Light the fueling area if night fueling operations are contemplated. Ensure any light poles do not constitute an obstruction hazard.

f. Tiedowns. Install recessed tiedowns to accommodate extended or overnight parking of based or transient helicopters. Recess any tiedowns so they will not be a hazard to helicopters. Ensure any depression associated with the tiedowns is of a diameter not greater than ½ the width of the smallest helicopter landing wheel or landing skid anticipated to be operated on the heliport surface. In addition, provide storage for tiedown chocks, chains, cables and ropes off the heliport surface to avoid fouling landing gear. Find guidance on recessed tiedowns in AC 20-35, Tiedown Sense.

215. Heliport markers and markings. Markers and/or surface markings identify the facility as a heliport. Use paint or preformed materials for surface markings. (See AC 150/5370-10, Item P-620, for specifications for paint and preformed material.). As options, use reflective paint and reflective markers, though overuse of reflective material can be blinding to a pilot using landing lights. As an option, outline lines/markings with a 6-inch (15 cm) wide line of a contrasting color to enhance conspicuity. Place markings that define the edges of a TLOF, FATO, taxiway or apron within the limits of those areas. Use the following markers and markings.

a. Heliport identification marking. The identification marking identifies the location as a heliport, marks the TLOF and provides visual cues to the pilot.

(1) Standard heliport identification symbol. Mark the TLOF with a white "H" marking. The "H" has a minimum height of the lesser of 0.3 D or 10 feet (3 m). Locate the "H" in the center of the TLOF and orient it on the axis of the preferred approach/departure path. Place a one-foot wide bar under the "H" when it is necessary to distinguish the preferred approach/departure direction. The proportions and layout of the letter "H" are illustrated in Figure 2–23. For a height of "H" less than 10 feet (3 m), reduce other dimensions proportionately.

(2) Nonstandard heliport identification marking. As an option use a distinctive marking, such as a company logo, to identify the facility as a PPR heliport. However, a nonstandard marking does not necessarily provide the pilot with the same degree of visual cueing as the standard heliport identification symbol. To compensate, increase the size of the safety area when the standard heliport identification symbol "H" is not used. See Table 2-1.

b. TLOF markings.

(1) TLOF perimeter marking. Define the TLOF perimeter with markers and/or lines. If the heliport operator does not mark the TLOF, increase the size of the safety area as described in paragraph 209.a and Table 2-1.

(a) Paved TLOFs. Define the perimeter of a paved or hard surfaced TLOF with a continuous, 12-inch-wide (30 cm), white line. See Figure 2–25.

(b) Unpaved TLOFs. Define the perimeter of an unpaved TLOF with a series of 12-inch-wide (30 cm), flush, in-ground markers, each approximately 5 feet (1.5 m) in length with end-to-end spacing of not more than 6 inches (15 cm). See Figure 2–25.

(2) Touchdown/positioning circle (TDPC) marking. A TDPC marking provides guidance to allow a pilot to touch down in a specific position on paved surfaces. When the pilot's seat is over the

marking, the undercarriage will be inside the LBA, and all parts of the helicopter will be clear of any obstacle by a safe margin. A TDPC marking is a yellow circle with an inner diameter of ½ D and a line width of 18 in (46 m). Locate a TDPC marking in the center of a TLOF. (See Figure 2–23). As an option, at PPR heliports where the TLOF width is less than 16 feet (5 m), omit the TDPC marking.

(3) TLOF size and weight limitations. Mark the TLOF to indicate the length and weight of the largest helicopter it will accommodate, as shown in Figure 2–23. Place these markings in a box in the lower right-hand corner of a rectangular TLOF, or on the right-hand side of the "H" of a circular TLOF, when viewed from the preferred approach direction. The box is 5 feet (1.5 m) square. The numbers are 18 inches (46 cm) high. (See Figure C–1). If necessary, allow this marking to interrupt the TDPC marking. (See Figure 2–23 and Figure C–1.) The numbers are black with a white background. This marking is optional at a TLOF with a turf surface. This marking is also optional at PPR heliports, since the operator ensures all pilots using the facility are thoroughly knowledgeable with this and any other facility limitations.

(a) TLOF size limitation. This number is the length (D) of the largest helicopter the TLOF will accommodate, as shown in Figure 2–23. The marking consists of the letter "D" followed by the dimension in feet. Do not use metric equivalents for this purpose. Center this marking in the lower section of the TLOF size/weight limitation box.

(b) TLOF weight limitations. If a TLOF has limited weight-carrying capability, mark it with the maximum takeoff weight of the design helicopter, in units of thousands of pounds, as shown in Figure 2–23. Do not use metric equivalents for this purpose. Center this marking in the upper section of a TLOF size/weight limitation box. If the TLOF does not have a weight limit, add a diagonal line, extending from the lower left hand corner to the upper right hand corner, to the upper section of the TLOF size/weight limitation box. See Figure 2–23.

c. Extended pavement/structure markings. As an option, increase the pavement or structure without a corresponding increase in the length and width or diameter of the FATO to accommodate pedestrians and/or support operations. Whether or not this increased area is part of the LBA, mark the area outside the TLOF with 12-inch-wide (30 cm) diagonal black and white stripes. See Figure 2–24 for marking details.

d. FATO markings.

(1) FATO perimeter marking. Define the perimeter of a load-bearing FATO with markers and/or lines. Do not mark the FATO perimeter if any portion of the FATO is not a load-bearing surface. In such cases, mark the perimeter of the LBA (see paragraph (b) below).

(a) Paved FATOs. Define the perimeter of a paved load-bearing FATO with a 12-inch-wide (30 cm) dashed white line. Define the corners of the FATO. The perimeter marking segments are approximately 5 feet (1.5 m) in length, and with end-to-end spacing of approximately 5 feet (1.5 m). See Figure 2–25.

(b) Unpaved FATOs. Define the perimeter of an unpaved load-bearing FATO with 12-inch-wide (30 cm), flush, in-ground markers. Define the corners of the FATO. The rest of the perimeter markers are approximately 5 feet (1.5 m) in length, and have end-to-end spacing of approximately 5 feet (1.5 m). See Figure 2–26.

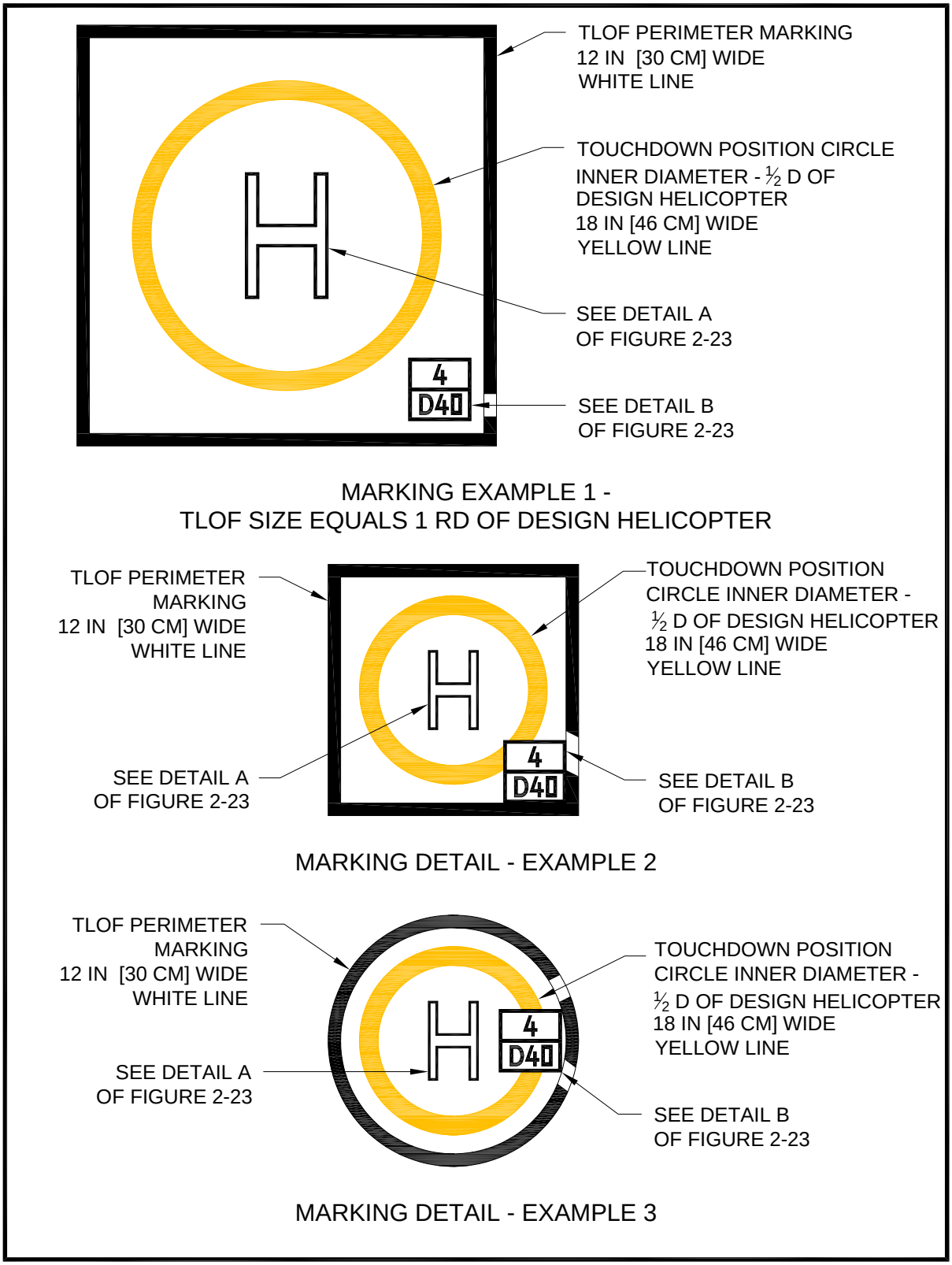
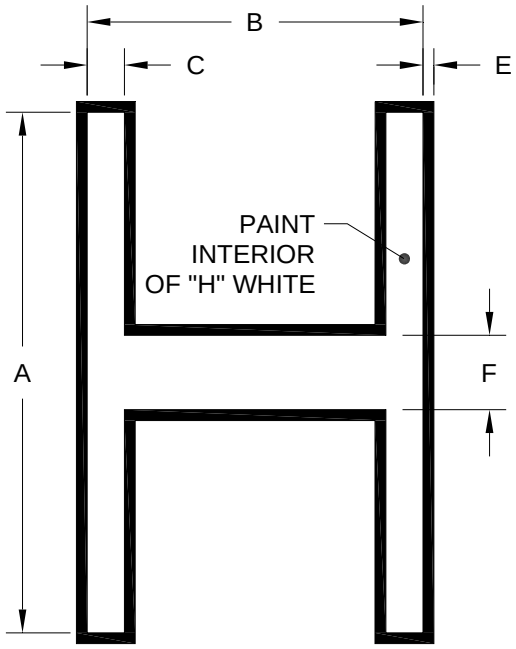
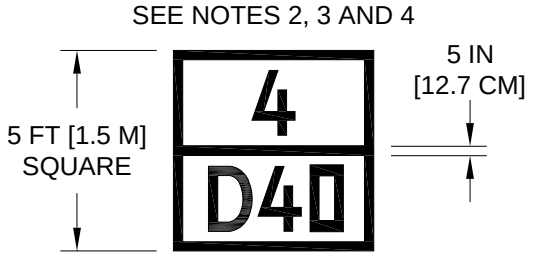


Figure 2–22. Standard and Alternate TLOF Marking: General Aviation



DIMENSION	"H" SIZE	
	STANDARD TLOF MARKING	ALTERNATE TLOF MARKING
A	10'-0" [3 M]	0.3D
B	6'-8" [1.8 M]	0.66A
C	1'-0" [30 CM]	0.1A
E	0'-3" [7 CM]	0.02A
F	2'-0" [61 CM]	0.2A

DETAIL A
HELIPORT IDENTIFICATION SYMBOL

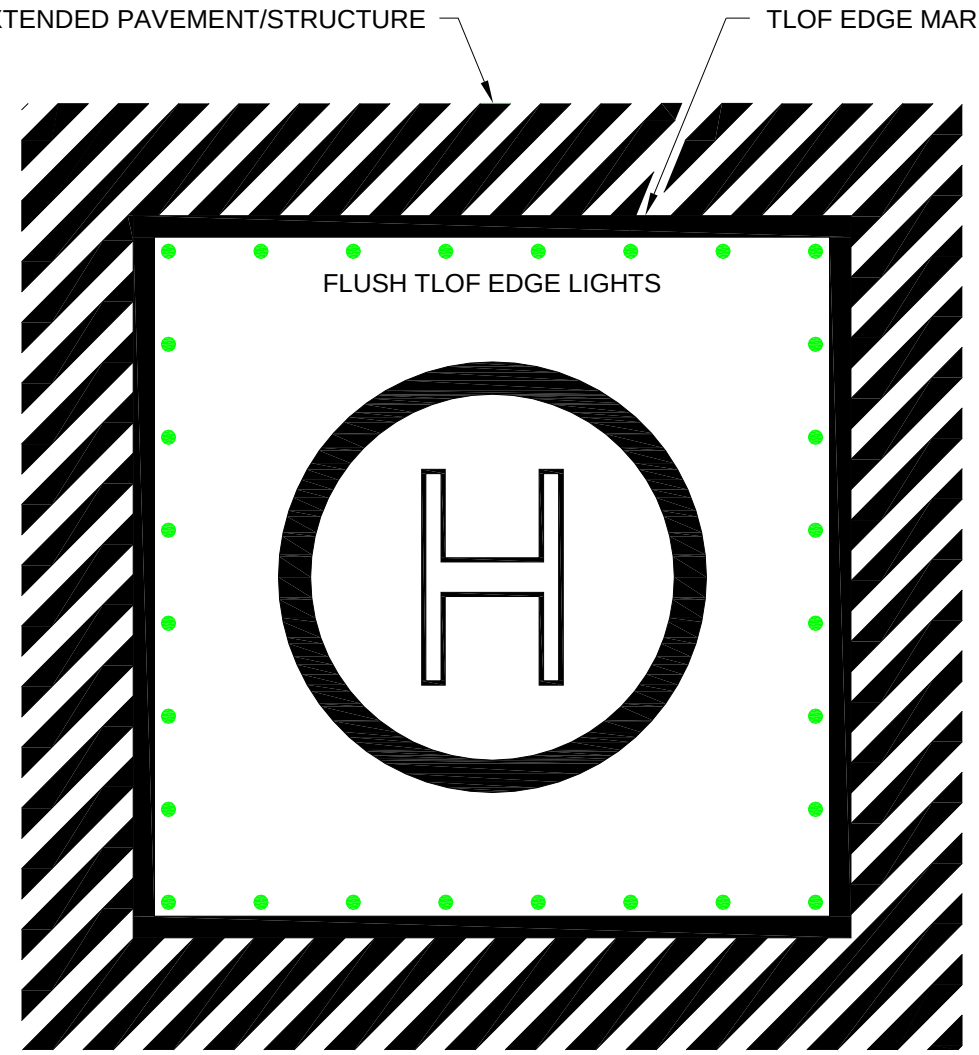


DETAIL B
TLOF SIZE/WEIGHT LIMITATION "BOX"

Notes:

1. See Appendix C for the form and proportion of the numbers used in the TLOF Size and Weight Limitation Box.
2. Characters within the TLOF Size and Weight Limitation Box are black on a white background.
3. "4" indicates the maximum takeoff weight (4,000 lbs) of the TLOF design helicopter, in units of thousands of pounds.
4. "D40" indicates the overall length of the largest helicopter (40 ft) for which the TLOF is designed.

Figure 2–23. Standard Heliport Identification Symbol, TLOF Size and Weight Limitations: General Aviation

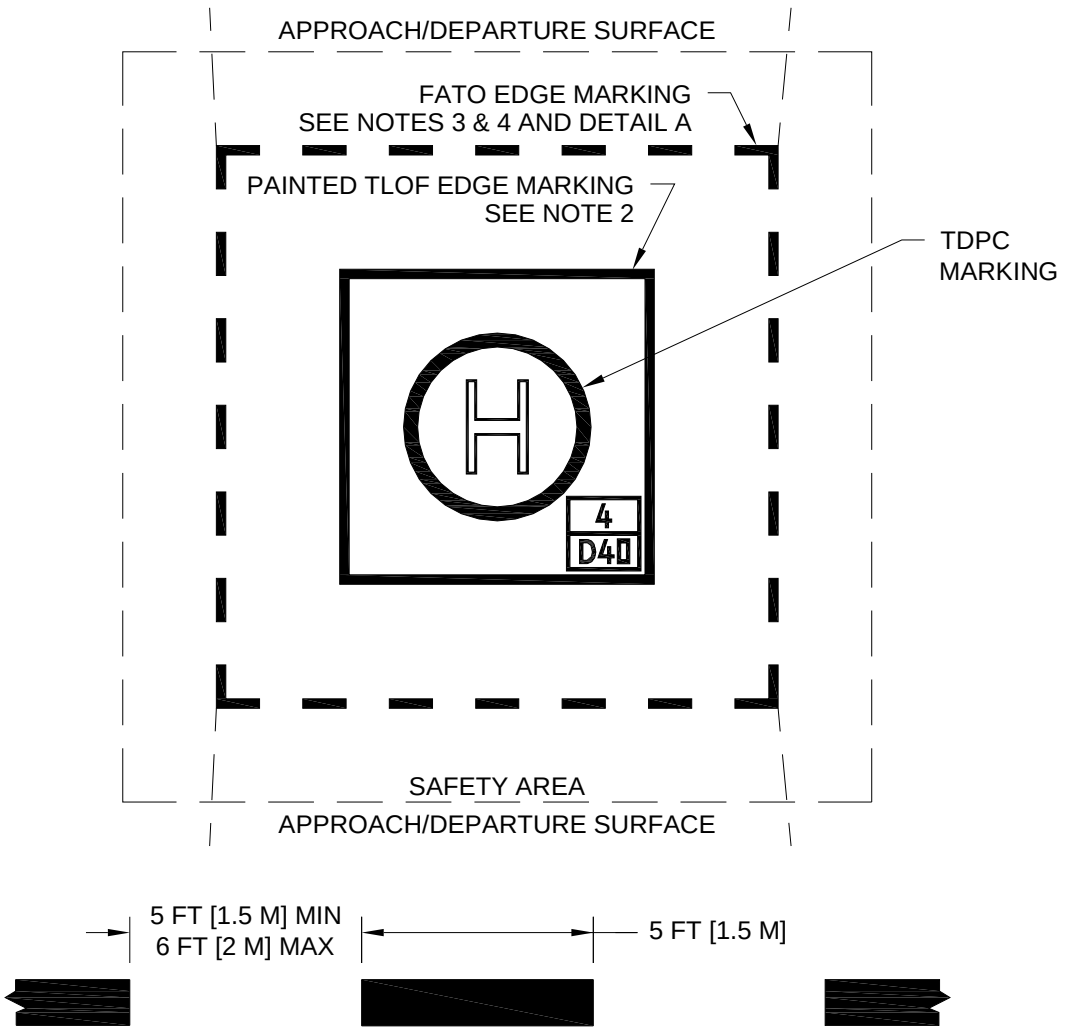


Notes:

1. Extended pavement/structure markings begin flush with TLOF edge markings and end at the edge of the extended pavement/structure.

2. Extended pavement/structure markings are 12 in [30 cm] wide black and white stripes on a 45° angle.

Figure 2–24. Extended Pavement / Structure Marking: General Aviation



DETAIL A FATO MARKING DETAIL

Notes:

1. Mark the perimeter of the TLOF and FATO.
2. Define the perimeter of a paved or hard surfaced TLOF with a continuous 12 in [30 cm] white line.
3. Define paved FATO perimeters with a 12 in [30 cm] wide dashed line per Detail A.
4. Define unpaved FATO perimeters with flush in-ground markers per Detail A.
5. See Figure 2-23 for " H", Touchdown/Position, Overall Length and Weight Limitation box dimensions.

Figure 2–25. Paved TLOF/Paved FATO – Paved TLOF/ Unpaved FATO – Marking: General Aviation

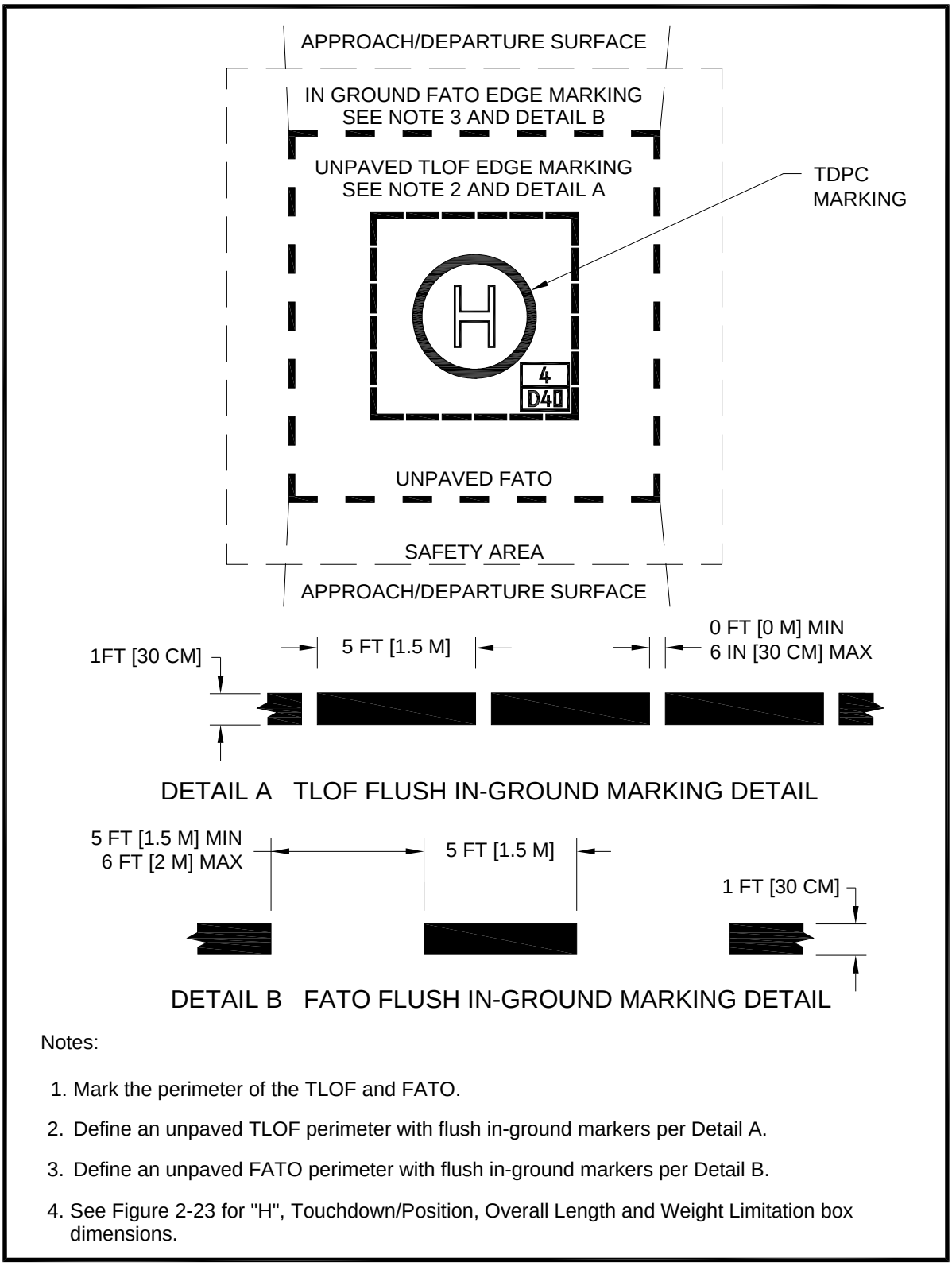


Figure 2–26. Unpaved TLOF/Unpaved FATO – Marking: General Aviation

e. Flight path alignment guidance marking. An optional flight path alignment guidance marking consists of one or more arrows to indicate the preferred approach/departure direction(s). Mark it on the TLOF, FATO and/or safety area surface as shown in Figure 2–11. The shaft of the each arrow is 18 inches (50 cm) in width and at least 10 feet (3 m) in length. Use a color which provides good contrast against the background color of the surface. An arrow pointing toward the center of the TLOF depicts an approach direction. An arrow pointing away from the center of the TLOF depicts a departure direction. In the case of a flight path limited to a single approach direction or a single departure path, the arrow marking is unidirectional. In the case of a heliport with only a bidirectional approach/takeoff flight path available, the arrow marking is bidirectional.

f. Taxiway and taxi route markings.

(1) Paved taxiway markings. Mark the centerline of a paved taxiway with a continuous 6-inch (15 cm) yellow line. As an option, mark both edges of the paved portion of the taxiway with two continuous 6-inch (15 cm) wide yellow lines spaced 6 inches (15 cm) apart. Figure 2–13 illustrates taxiway centerline and edge markings.

(2) Unpaved taxiway markings. Use either raised or in-ground flush edge markers to provide strong visual cues to pilots. Space them longitudinally at approximately 15-foot (5 m) intervals on straight segments and at approximately 10-foot (3 m) intervals on curved segments. Figure 2–14 and Figure 2–15 illustrate taxiway edge markings.

(a) Raised-edge markers are blue, 4 inches (10 cm) in diameter, and 8 inches (20 cm) high, as illustrated in Figure 2–14.

(b) In-ground, flush edge markers are yellow, 12 inches (30 cm) wide, and approximately 5 feet (1.5 m) long.

(3) Raised edge markers in grassy areas. Tall grass sometimes obscures raised edge markers Address this issue by using 12-inch (30 cm) diameter solid material disks around the poles supporting the raised markers.

(4) Taxiway to parking position transition requirements. For paved taxiways and parking areas, taxiway centerline markings continue into parking positions and become the parking position centerlines.

g. Helicopter parking position markings. Helicopter parking positions have the following markings:

(1) Paved parking position identifications. Mark parking position identifications (numbers or letters) if there is more than one parking position. These markings are yellow characters 36 inches (91 cm) high. See Figure 2–21 and Figure C–1.

(2) Rotor diameter circle. Define the circle of the RD of the largest helicopter that will park at that position with a 6-inch (15 cm) wide, solid yellow line with an outside diameter of RD. In paved areas, this is a painted line (see Figure 2–21). In unpaved areas, use a series of flush markers, 6 inches (15 cm) in width, a maximum of 5 feet (1.5 m) in length, and with end-to-end spacing of approximately 5 feet (1.5 m).

(3) Touchdown/positioning circle (TDPC) marking. An optional TDPC marking provides guidance to allow a pilot to touch down in a specific position on paved surfaces. When the pilot's seat is over the marking, the undercarriage will be inside the LBA, and all parts of the helicopter will be clear of any obstacle by a safe margin. A TDPC marking is a yellow circle with an inner diameter of ½ D and a line width of 18 in (46 cm). Locate a TDPC marking in the center of a parking area. See Figure 2–21 and Figure 2–25. The FAA recommends a TDPC marking for "turn-around" parking areas.

(4) Maximum length marking. This marking on paved surfaces indicates the D of the largest helicopter that the position is designed to accommodate (for example, 49). This marking consists of yellow characters at least 36 inches (91 cm) high. See Figure 2–21 and Figure C–1.

(5) Parking position weight limit. If a paved parking position has a weight limitation, mark it in units of 1,000 lbs as illustrated in Figure 2–21. (A 4 indicates a weight-carrying capability of up to 4,000 lbs. Do not use metric equivalents for this purpose.) This marking consists of yellow characters 36 inches (91 cm) high. When necessary to minimize the possibility of being misread, place a bar under the number. See Figure 2–21, Figure 2–25, and Figure C–1.

(6) Shoulder line markings. As an option, use shoulder line markings for paved parking areas (Figure 2–21) to ensure safe rotor clearance. Locate a 6-inch (15 cm) wide solid yellow shoulder line, perpendicular to the centerline and extending to the RD marking, so it is under the pilot's shoulder such that the main rotor of the largest helicopter the position will accommodate will be entirely within the rotor diameter parking circle (see Figure 2–21). Use ¼ D from the center of parking area to define the location of shoulder line. The FAA recommends a shoulder line marking for "taxi-through" and "back-out" parking areas.

h. Walkways. Figure 2–21 illustrates one marking scheme.

i. Closed heliport. Obliterate all markings of a permanently closed heliport, FATO, or TLOF. If it is impractical to obliterate markings, place a yellow "X" over the "H" as illustrated in Figure 2–27. Make the yellow "X" large enough to ensure early pilot recognition that the heliport is closed. Remove the wind cone(s) and other visual indications of an active heliport.

j. Marking sizes. See Appendix C for guidance on the proportions of painted numbers.

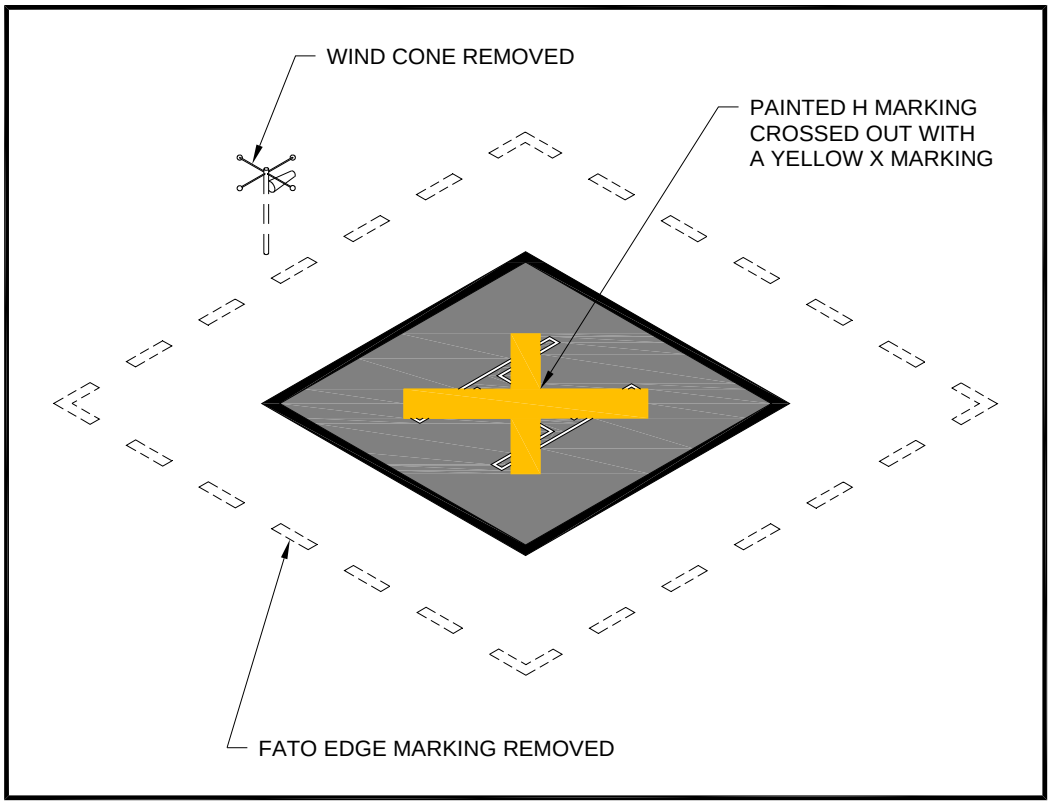


Figure 2–27. Marking a Closed Heliport: General Aviation

216. Heliport lighting. If the heliport operator intends for the facility to support night operations, light it with FATO and/or TLOF perimeter lights as described below. Design flush light fixtures and installation methods to support point loads of the design helicopter transmitted through a skid or wheel.

a. TLOF perimeter lights. Use flush green lights meeting the requirements of FAA Airports Engineering Brief 87, Heliport Perimeter Light for Visual Meteorological Conditions (VMC), to define the TLOF perimeter. Use a minimum of. As an option at PPR facilities, use three light fixtures per side of a square or rectangular TLOF. Locate a light at each corner, with additional lights uniformly spaced between the corner lights. Using an odd number of lights on each side will place lights along the centerline of the approach. Define a circular TLOF using an even number of lights, with a minimum of eight, uniformly spaced. Space the lights at a maximum of 25 feet (7.6 m). Locate flush lights within 1 foot (30 cm) inside or outside of the TLOF perimeter.

(1) Raised TLOF perimeter lights. As an option, use raised, omnidirectional lights meeting the requirements of EB 87. Locate them on the outside edge of the TLOF or the outer edge of the safety net, as shown in Figure 2–28. Lighting on the outer edge of the safety net provides better visual cues to pilots at a distance from the heliport since it outlines a larger area. Make sure the raised lights do not penetrate a horizontal plane at the FATO elevation by more than 2 inches (5 cm). See Figure 7–3.

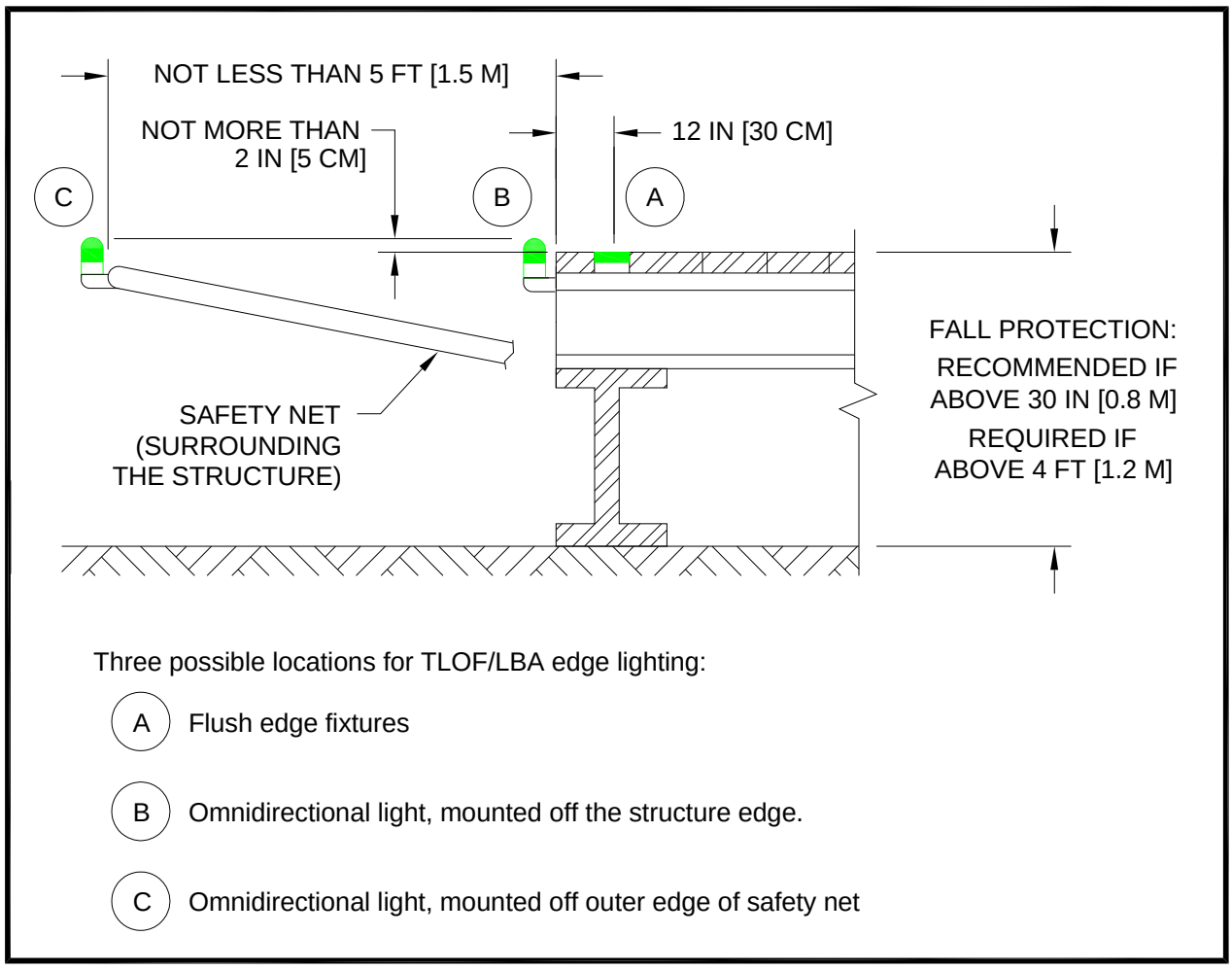


Figure 2–28. Elevated TLOF – Perimeter Lighting: General Aviation

(2) PPR facilities. Use flush lights for PPR heliports. As an option if only the TLOF is load bearing, use raised omnidirectional lights. Locate the raised lights outside and within 10 feet (3 m) of the edge of the TLOF. Make sure the lights do not penetrate a horizontal plane at the TLOF elevation by more than 2 inches (5 cm). As an option when the pavement or structure is larger than the TLOF, mount perimeter lights on the outer edge of the pavement or structure or the inner or outer edge of the safety net.

b. Load-bearing FATO perimeter lights. Green lights meeting the requirements of EB 87 define the perimeter of a load bearing FATO. Do not light the FATO perimeter if any portion of the FATO is not a load-bearing surface. Use a minimum of four. As an option at PPR facilities, use a minimum of three flush or raised light fixtures per side of a square or rectangular FATO. Locate a light at each corner, with additional lights uniformly spaced between the corner lights. Using an odd number of lights on each side will place lights along the centerline of the approach. To define a circular FATO, use an even number of lights, with a minimum of eight, uniformly spaced. Space lights at a maximum of 25 feet (7.6 m). Locate flush lights within 1 foot (30 cm) inside or outside of the FATO perimeter (See Figure 2–29). As an option, use a square or rectangular pattern of FATO perimeter lights even if the TLOF is circular. At a distance during nighttime operations, a square or rectangular pattern of FATO perimeter lights provides the pilot with better visual alignment cues than a circular pattern, but a circular pattern may be more effective in an urban environment. In the case of an elevated FATO with a safety net, mount the perimeter lights a similar manner as discussed in paragraph 215.a(1). As an option, locate raised FATO perimeter lights, no more than 8 inches (20 cm) high, 10 feet (3 m) from the FATO perimeter. (See Figure 2–30.) When a heliport on an airport is sited near a taxiway, there may be a concern that a pilot may confuse the green taxiway centerline lights with the FATO perimeter lights. As an option in such cases, use yellow lights as an alternative color for marking the FATO.

c. Floodlights. The FAA has not evaluated floodlights for effectiveness in visual acquisition of a heliport. However, if ambient light does not adequately illuminate markings for night operations, use floodlights to illuminate the TLOF, the FATO, and/or the parking area. If possible, mount these floodlights on adjacent buildings to eliminate the need for tall poles. Take care, however, to place floodlights clear of the TLOF, the FATO, the safety area, and the approach/departure surfaces, and transitional surfaces and ensure floodlights and their associated hardware do not constitute an obstruction hazard. Aim floodlights down to provide adequate illumination on the surface. Make sure floodlights that might interfere with pilot vision during takeoff and landings are capable of being turned off by pilot control or at pilot request.

d. Landing direction lights. As an option when it is necessary to provide directional guidance, install landing direction lights. Landing direction lights are a configuration of five green, omnidirectional lights meeting the standards of EB 87, on the centerline of the preferred approach/departure path. Space these lights at 15-foot (5 m) intervals beginning at a point not less than 20 feet (6 m) and not more than 60 feet (18 m) from the TLOF perimeter and extending outward in the direction of the preferred approach/departure path, as illustrated in Figure 2–31.

e. Flight path alignment lights. As an option, install flight path alignment lights meeting the requirements of EB 87. Place them in a straight line along the direction of approach and/or departure flight paths. If necessary, extend them across the TLOF, FATO, safety area or any suitable surface in the immediate vicinity of the FATO or safety area. Install three or more green lights spaced at 5 feet (1.5 m) to 10 feet (3.0 m). See Figure 2–11.

f. Taxiway and taxi route lighting.

(1) Taxiway centerline lights. Use flush bidirectional green lights meeting the standards of AC 150/5345-46, Specification for Runway and Taxiway Light Fixtures for type L-852A (straight segments) or L-852B (curved segments) to define taxiway centerlines. Space these lights at maximum 50-foot (15 m) longitudinal intervals on straight segments and at maximum 25-foot (7.6 m) intervals on curved segments, using a minimum of four lights to define the curve. Uniformly offset taxiway centerline lights

no more than two feet (0.6 m) if necessary to ease painting the taxiway centerline. As an option, use green retroreflective markers meeting requirements for Type I markers in AC 150/5345-39, Specification for L-853, Runway and Taxiway Retroreflective Markers, in lieu of the L-852A or L-852B lighting fixtures.

(2) Taxiway edge lights. Use omnidirectional blue lights to light the edges of a taxiway. As an option, use blue retroreflective markers to identify the edges of the taxiway in lieu of lights. Make sure retroreflective markers are no more than 8 inches (20 cm) tall.

(a) Straight segments. Space lights at 50-foot (15.2 m) longitudinal intervals on straight segments.

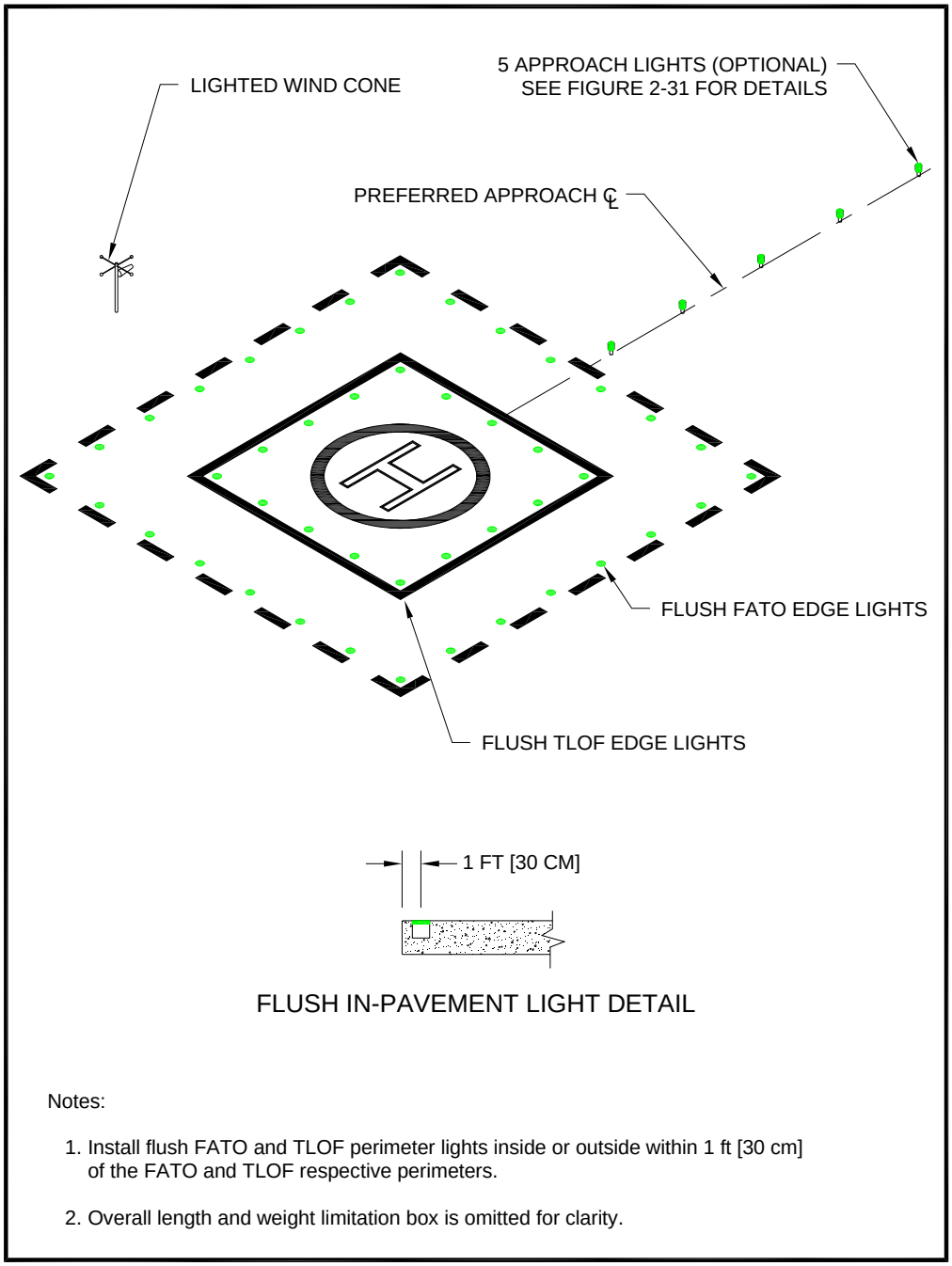
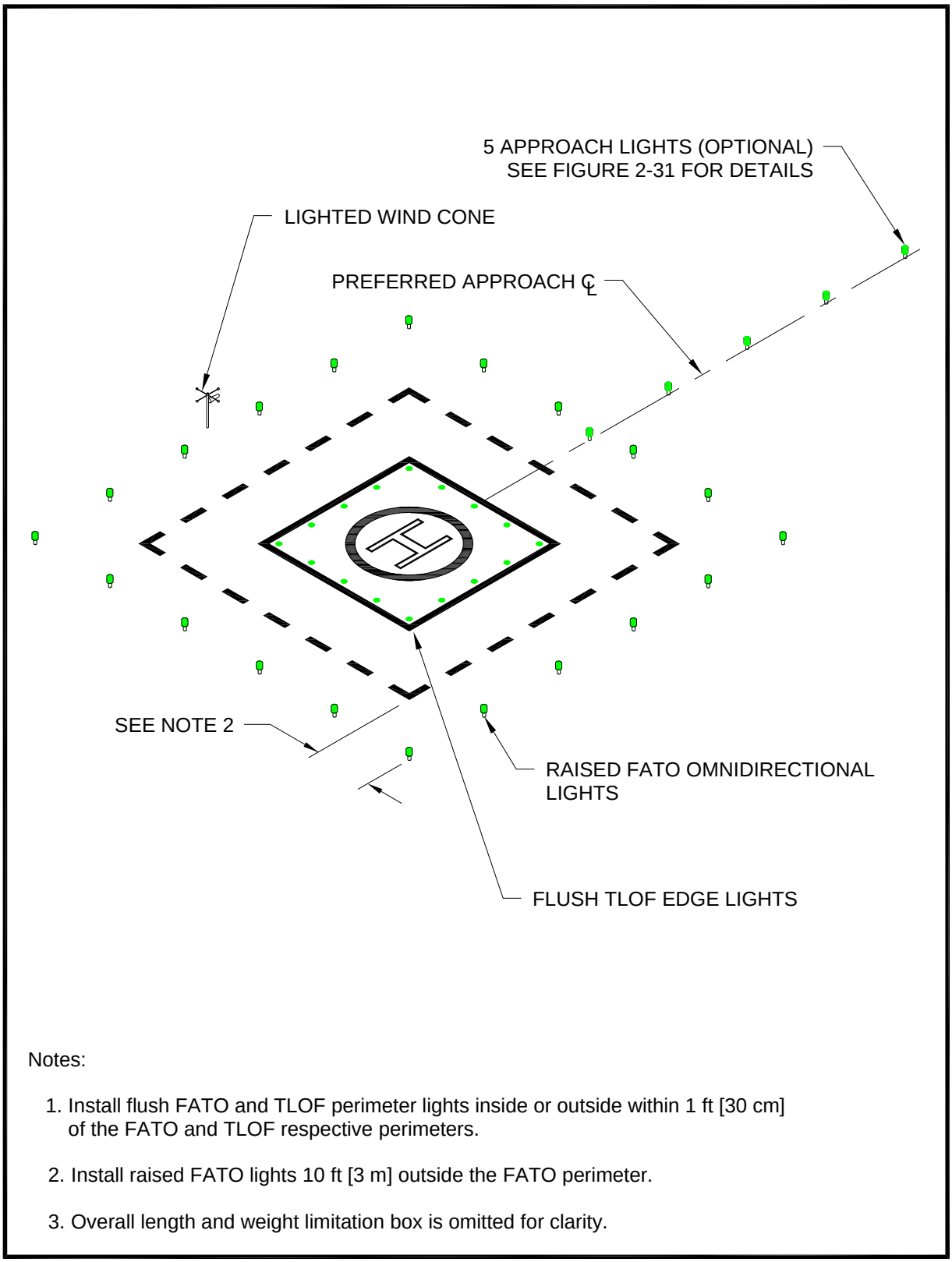


Figure 2–29. TLOF/FATO Flush Perimeter Lighting: General Aviation



Notes:

1. Install flush FATO and TLOF perimeter lights inside or outside within 1 ft [30 cm] of the FATO and TLOF respective perimeters.
2. Install raised FATO lights 10 ft [3 m] outside the FATO perimeter.
3. Overall length and weight limitation box is omitted for clarity.

Figure 2–30. TLOF Flush and FATO Raised Perimeter Lighting: General Aviation

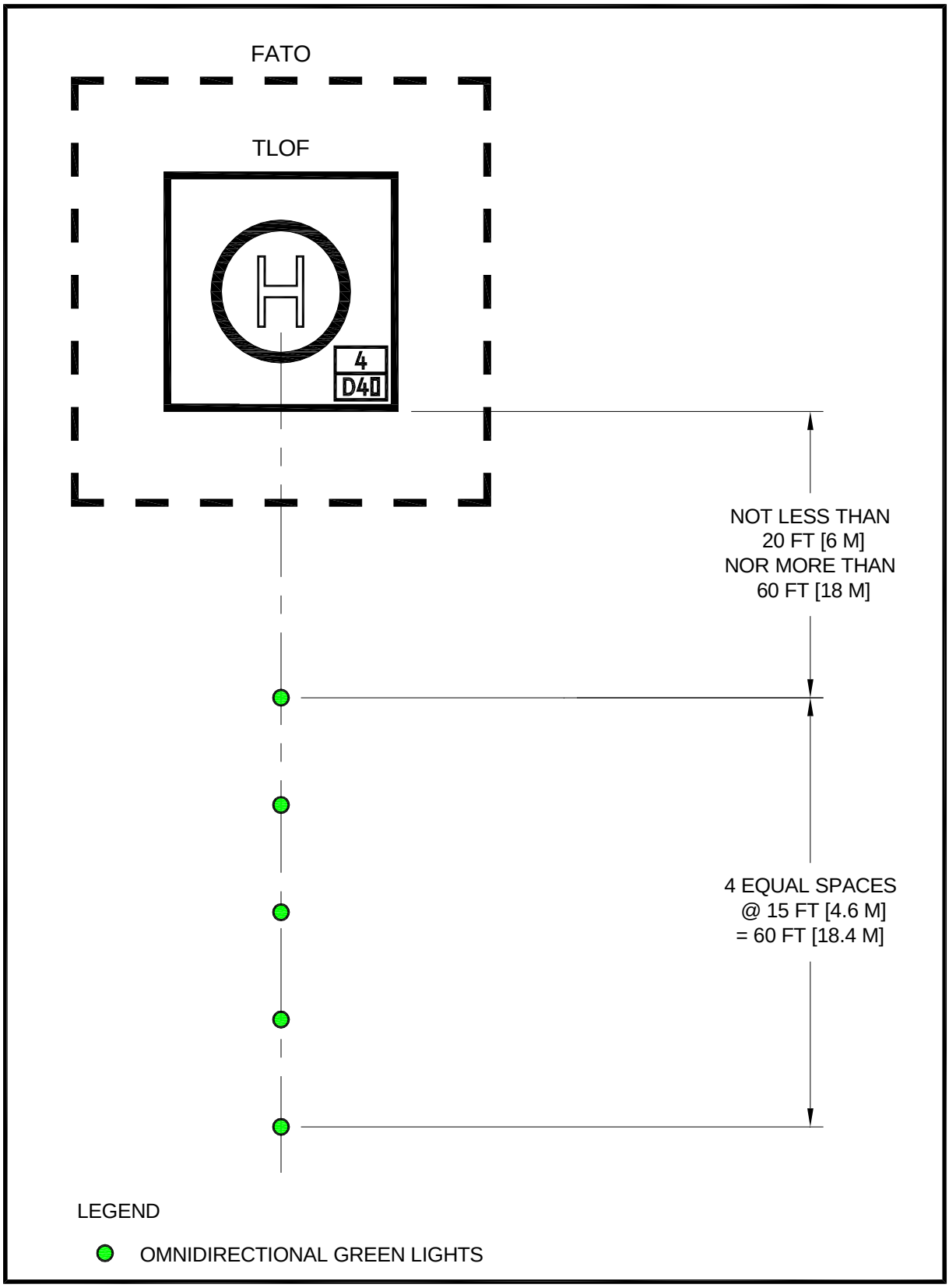


Figure 2–31. Landing Direction Lights: General Aviation

(b) Curved segments. Curved taxiway edges require shorter spacing of edge lights. Base the spacing on the radius of the curve. AC 150/5340-30, Design and Installation Detail for Airport Visual Aids, shows the applicable spacing for curves. Space taxiway edge lights uniformly. On curved edges of more than 30 degrees from point of tangency (PT) of the taxiway section to PT of the intersecting surface, install at least three edge lights. For radii not listed in AC 150/5340-30, determine spacing by linear interpolation.

(c) Paved taxiways. Use flush lights meeting the standards of AC 150/5345-46 for type L-852T.

(d) Unpaved taxiways. Use raised lights meeting the standards of AC 150/5345-46 for type L-861T. The lateral spacing for the lights or reflectors is equal to the RD of the design helicopter, but not more than 35 feet (10.7 m).

g. Heliport identification beacon. A heliport identification beacon is optional equipment. It is the most effective means to aid the pilot in visually locating the heliport. Locate the beacon, flashing white/green/yellow at the rate of 30 to 45 flashes per minute, on or close to the heliport. Find guidance on heliport beacons in AC 150/5345-12, Specification for Airport and Heliport Beacon. As an option, allow the beacon to be pilot controllable such that it is "on" only when needed.

217. Marking and lighting of difficult-to-see objects. It is difficult for a pilot to see unmarked wires, antennas, poles, cell towers, and similar objects, even in the best daylight weather, in time to take evasive action. While pilots can avoid such objects during en route operations by flying well above them, approaches and departures require operations near the ground where obstacles may be a factor. This paragraph discusses the marking and lighting of objects near, but outside and below the approach/departure surface. Find guidance on marking and lighting objects in AC 70/7460-1, Obstruction Marking and Lighting.

a. Airspace. If difficult-to-see objects penetrate the applicable object identification surfaces illustrated in Figure 2–32 and Figure 2–33, mark these objects to make them more conspicuous. If a heliport supports operations between dusk and dawn, light these difficult-to-see objects. The object identification surfaces in Figure 2–32 and Figure 2–33 are described as follows:

(1) In all directions from the safety area except under the approach/departure paths, the object identification surface starts at the safety area perimeter and extends out horizontally for a distance of 100 feet (30.5 m).

(2) Under the approach/departure surface, the object identification surface starts from the outside edge of the FATO and extends horizontally out for a distance of 800 feet (244 m) along the approach path. From this point, the object identification surface extends out for an additional distance of 3,200 feet (975 m) along the approach path while rising on an 8:1 slope (8 units horizontal in 1 unit vertical). From the point 800 feet (244 m) from the FATO perimeter, the object identification surface is 100 feet (30.5 m) beneath the approach/departure surface.

(3) The width of this object identification surface under the approach/departure surface increases as a function of distance from the safety area. From the safety area perimeter, the object identification surface extends laterally to a point 100 feet (30.5 m) outside the safety area perimeter. At the upper end of the surface, the object identification surface extends laterally 200 feet (61 m) on either side of the approach/departure path.

b. Shielding of objects. Title 14 CFR Part 77.9, Construction or alteration requiring notice, provides that if there are a number of objects close together, it may not be necessary to mark all of them if they are shielded. To meet the shielding guidelines, part 77 requires that an object "be shielded by existing structures of a permanent and substantial nature or by natural terrain or topographic features of equal or greater height, and will be located in the congested area of a city, town, or settlement where the shielded structure will not adversely affect safety in air navigation."

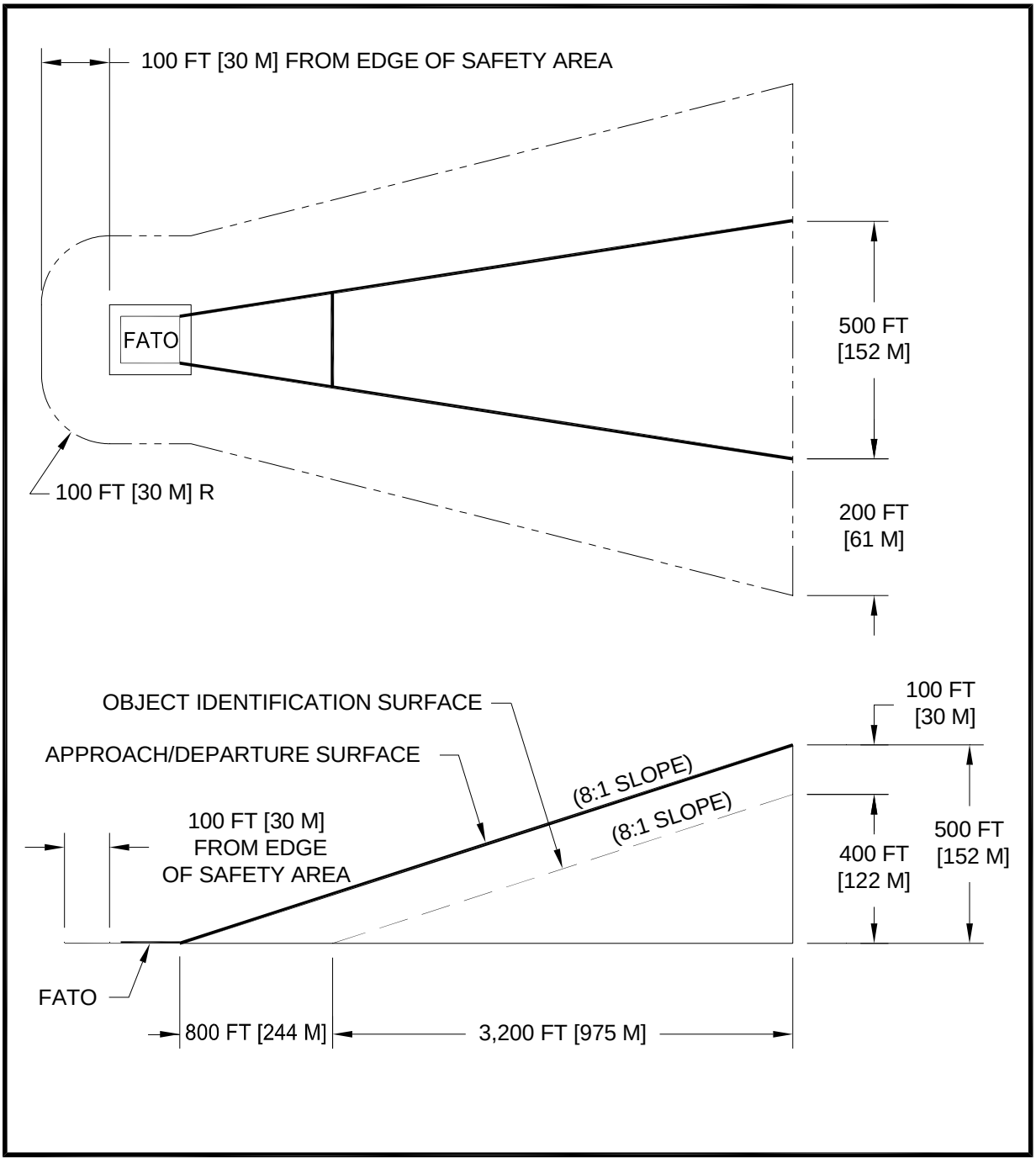


Figure 2–32. Airspace Where Marking and Lighting are Recommended: Straight Approach: General Aviation

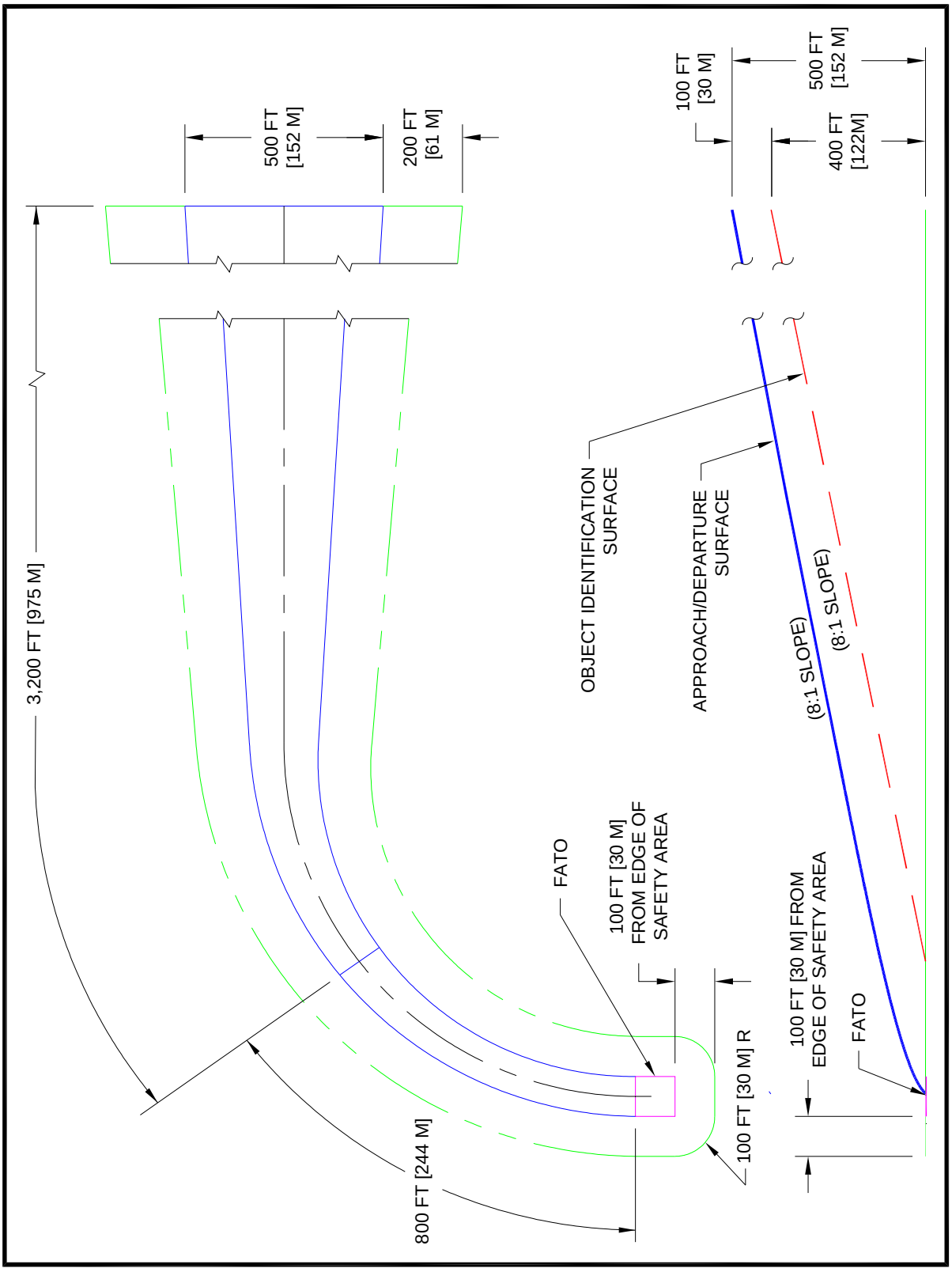


Figure 2–33. Airspace Where Marking and Lighting are Recommended: Curved Approach: General Aviation

c. Equipment/object marking. Make heliport maintenance and servicing equipment, as well as other objects used in the airside operational areas, conspicuous with paint, reflective paint, reflective tape, or other reflective markings. Reference AC 150/5210-5, Painting, Marking, and Lighting of Vehicles Used on an Airport.

218. Safety considerations. Consider the following safety enhancements in the design of a heliport. Address other areas, such as the effects of rotor downwash, based on site conditions and the design helicopter.

a. Security. Provide a heliport with appropriate means of keeping the operational areas clear of people, animals, and vehicles. Use a method to control access depending upon the helicopter location and types of potential intruders.

(1) Safety barrier. At ground-level general aviation heliports, erect a safety barrier around the helicopter operational areas in the form of a fence or a wall. Construct the barrier no closer to the operation areas than the outer perimeter of the safety area. Make sure the barrier does not penetrate any approach/departure (primary or transitional) surface. If necessary in the vicinity of the approach/departure paths, install the barrier well outside the outer perimeter of the safety area.

(2) Make sure any barrier is high enough to present a positive deterrent to persons inadvertently entering an operational area and yet low enough to be non-hazardous to helicopter operations.

(3) Control access to airside areas in a manner commensurate with the barrier (for example, build fences with locked gates). Display a cautionary sign similar to that illustrated in Figure 2–34 at access points.

b. Rescue and fire-fighting services. Heliports are subject to state and local rescue and fire-fighting regulations. Provide a fire hose cabinet or extinguisher at each access gate/door and each fueling location. Locate fire hose cabinets, fire extinguishers, and other fire-fighting equipment near, but below the level of, the TLOF. Find additional information in various NFPA publications. For more reference material, see Appendix D.

c. Communications. Use a Common Traffic Advisory Frequency (CTAF) radio to provide arriving helicopters with heliport and traffic advisory information but do not use this radio to control air traffic. Contact the Federal Communications Commission (FCC) for information on CTAF licensing.

d. Weather information. An automated weather observing system (AWOS) measures and automatically broadcasts current weather conditions at the heliport site. When installing an AWOS, locate it at least 100 feet (30 m) and not more than 700 feet (213 m) from the TLOF and such that its instruments will not be affected by rotor wash from helicopter operations. Find guidance on AWOS systems in AC 150/5220-16, Automated Weather Observing Systems (AWOS) for Non-Federal Applications, and FAA Order 6560.20, Siting Criteria for Automated Weather Observing Systems (AWOS). Other weather observing systems will have different siting criteria.

e. Winter operations. Swirling snow raised by a helicopter's rotor wash can cause the pilot to lose sight of the intended landing point and/or hide objects that need to be avoided. Design the heliport to accommodate the methods and equipment used for snow removal. Design the heliport to allow the snow to be removed sufficiently so it will not present an obstruction hazard to the tail rotor, main rotor, or undercarriage. Find guidance on winter operations in AC 150/5200-30, Airport Winter Safety and Operations.

Figure 2–34. Caution Sign: General Aviation

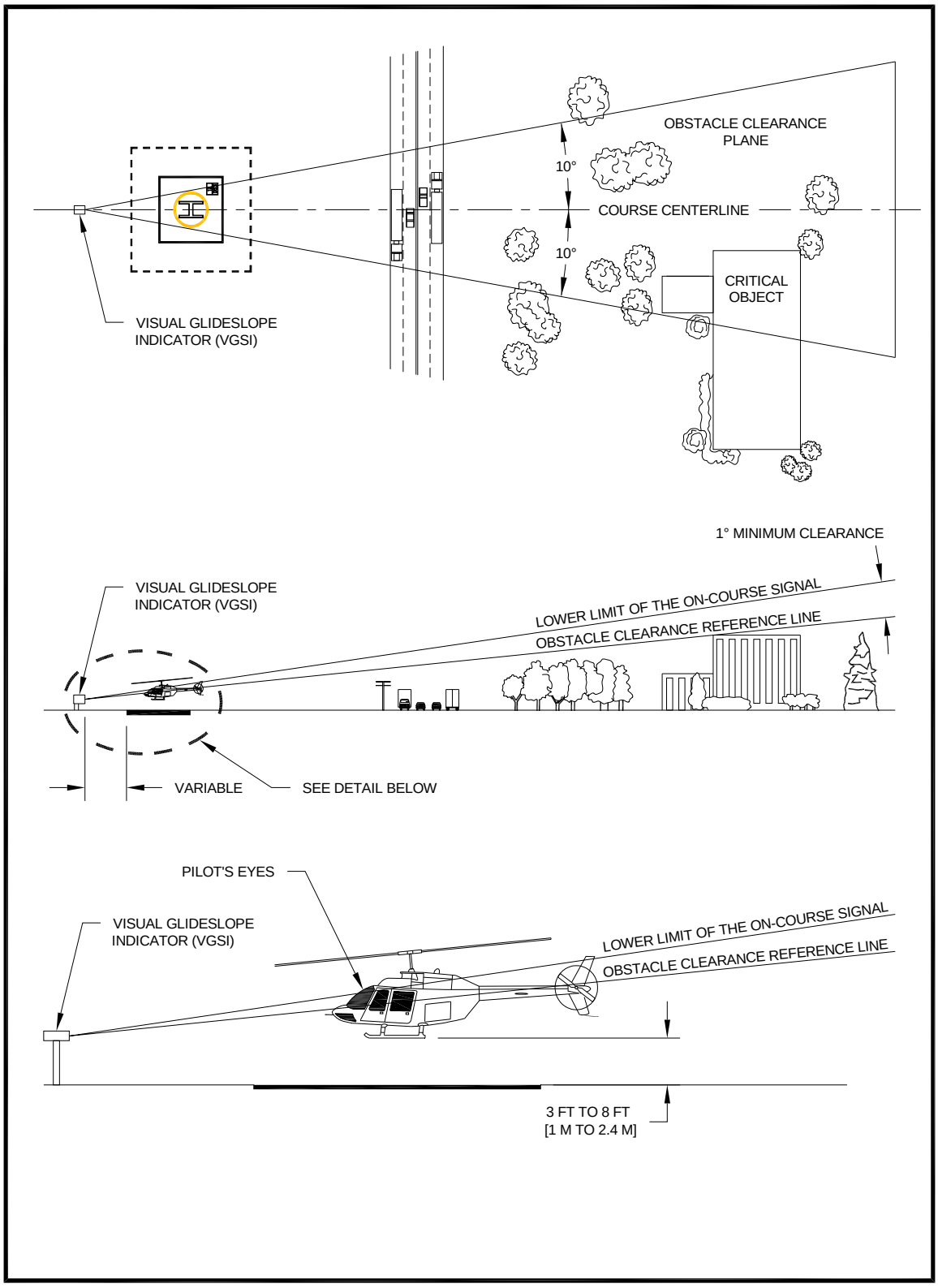


Figure 2–35. Visual Glideslope Indicator Siting and Clearance Criteria: General Aviation

219. Visual glideslope indicators (VGSI). A visual glideslope indicator (VGSI) provides pilots with visual vertical course and descent cues. Install the VGSI such that the lowest on-course visual signal provides a minimum of 1 degree of clearance over any object that lies within 10 degrees of the approach course centerline.

a. Siting. The optimum location of a VGSI is on the extended centerline of the approach path at a distance that brings the helicopter to a hover with the undercarriage between 3 and 8 feet (0.9 to 2.5 m) above the TLOF. Figure 2–35 illustrates VGSI clearance criteria. To properly locate the VGSI, estimate the vertical distance from the undercarriage to the pilot's eye.

b. Control of the VGSI. As an option, allow the VGSI to be pilot controllable such that it is "on" only when needed.

c. VGSI needed. A VGSI is an optional feature. However, provide a VGSI if one or more of the following conditions exist, especially at night:

(1) Obstacle clearance, noise abatement, or traffic control procedures require a particular slope to be flown.

(2) The environment of the heliport provides few visual surface cues.

d. Additional guidance. Find additional guidance in AC 150/5345-52, Generic Visual Glideslope Indicators (GVGI), and AC 150/5345-28, Precision Approach Path Indicator (PAPI) Systems.

220. Terminal facilities. A heliport terminal provides curbside access for passengers using private autos, taxicabs, and public transit vehicles. Public waiting areas need the usual amenities, and a counter for rental car services may be desirable. Design passenger auto parking areas to accommodate current requirements, with the ability to expand them to meet future requirements. Readily available public transportation may reduce the requirement for employee and service personnel auto parking spaces. Build attractive and functional heliport terminal buildings or sheltered waiting areas. Find guidance on designing terminal facilities in AC 150/5360-9, Planning and Design of Airport Terminal Building Facilities at Non-Hub Locations. At PPR heliports, the number of people using the facility may be so small that there is no need for a terminal building, and minimal needs for other facilities and amenities.

221. Zoning and compatible land use. The FAA encourages general aviation heliport operators to promote the adoption of the following zoning measures where state and local statutes permit to ensure the heliport will continue to be available and to protect the investment in the facility.

a. Zoning to limit building/object heights. Find general guidance on drafting an ordinance that would limit building and object heights in AC 150/5190-4, A Model Zoning Ordinance to Limit Height of Objects Around Airports. Substitute the heliport surfaces for the airport surfaces in the model ordinance.

b. Zoning for compatible land use. The FAA encourages public agencies to enact zoning ordinances to control the use of property within the HPZ and the approach/departure path environment, restricting activities to those that are compatible with helicopter operations. See paragraph 211.

c. Air rights and property easements. Use air rights and property easements as options to prevent the encroachment of obstacles in the vicinity of a heliport.

Chapter 3. Transport Heliports

301. General. A transport heliport is intended to accommodate air carrier operators providing scheduled service, or unscheduled service with large helicopters.

302. Applicability. The standards in this chapter apply to projects funded under the Airport Improvement Program (AIP) or Passenger Facility Charge (PFC) program. For other projects/heliports, these standards are the FAA's recommendations for designing all transport heliports. The design standards in this chapter assume there will never be more than one helicopter within the final approach and takeoff area (FATO) and the associated safety area. If there is a need for more than one touchdown and lift-off area (TLOF) at a heliport, locate each TLOF within its own FATO and within its own safety area. Figure 3–1 illustrates a typical transport heliport.

303. Access by individuals with disabilities. Various laws require heliports operated by public entities and those receiving federal financial assistance to meet accessibility requirements. See paragraph 114.

304. Heliport site selection.

a. Long term planning. Public agencies and others planning to develop a transport heliport consider the possible future need for instrument operations and future expansion.

b. Property requirements. The property needed for a transport heliport depends upon the volume and types of users and the scope of amenities provided. Property requirements for helicopter operators and for passenger amenities frequently exceed that required for "airside" purposes.

c. Turbulence. Air flowing around and over buildings, stands of trees, terrain irregularities, etc. can create turbulence on ground-level and roof-top heliports that may affect helicopter operations. Where the FATO is located near the edge and top of a building or structure, or within the influence of turbulent wakes from other buildings or structures, assess the turbulence and airflow characteristics in the vicinity of, and across the surface of the FATO to determine if an air-gap between the roof, roof parapet or supporting structure, and/or some other turbulence mitigating design measure is necessary. FAA Technical Report FAA/RD-84/25, Evaluating Wind Flow around Buildings on Heliport Placement addresses the wind's effect on helicopter operations. Take the following actions in selecting a site to minimize the effects of turbulence.

(1) Ground-level heliports. Features such buildings, trees, and other large objects can cause air turbulence and affect helicopter operations from sites immediately adjacent to them. Therefore, locate the landing and takeoff area away from such objects in order to minimize air turbulence in the vicinity of the FATO and the approach/departure paths.

(2) Elevated heliports. Establishing a 6 foot (1.8 m) or more air gap on all sides above the level of the roof will generally minimize the turbulent effect of air flowing over the roof edge. If an air gap is included in the design, keep it free at all times of objects that would obstruct the airflow. If it is not practical to include an air gap or some other turbulence mitigating design measure where there is turbulence, operational limitations may need to be considered under certain wind conditions (see paragraph 101).

d. Electromagnetic effects. Nearby electromagnetic devices, such as a large ventilator motor, elevator motor or other large electrical consumer may cause temporary aberrations in the helicopter magnetic compass and interfere with other onboard navigational equipment.

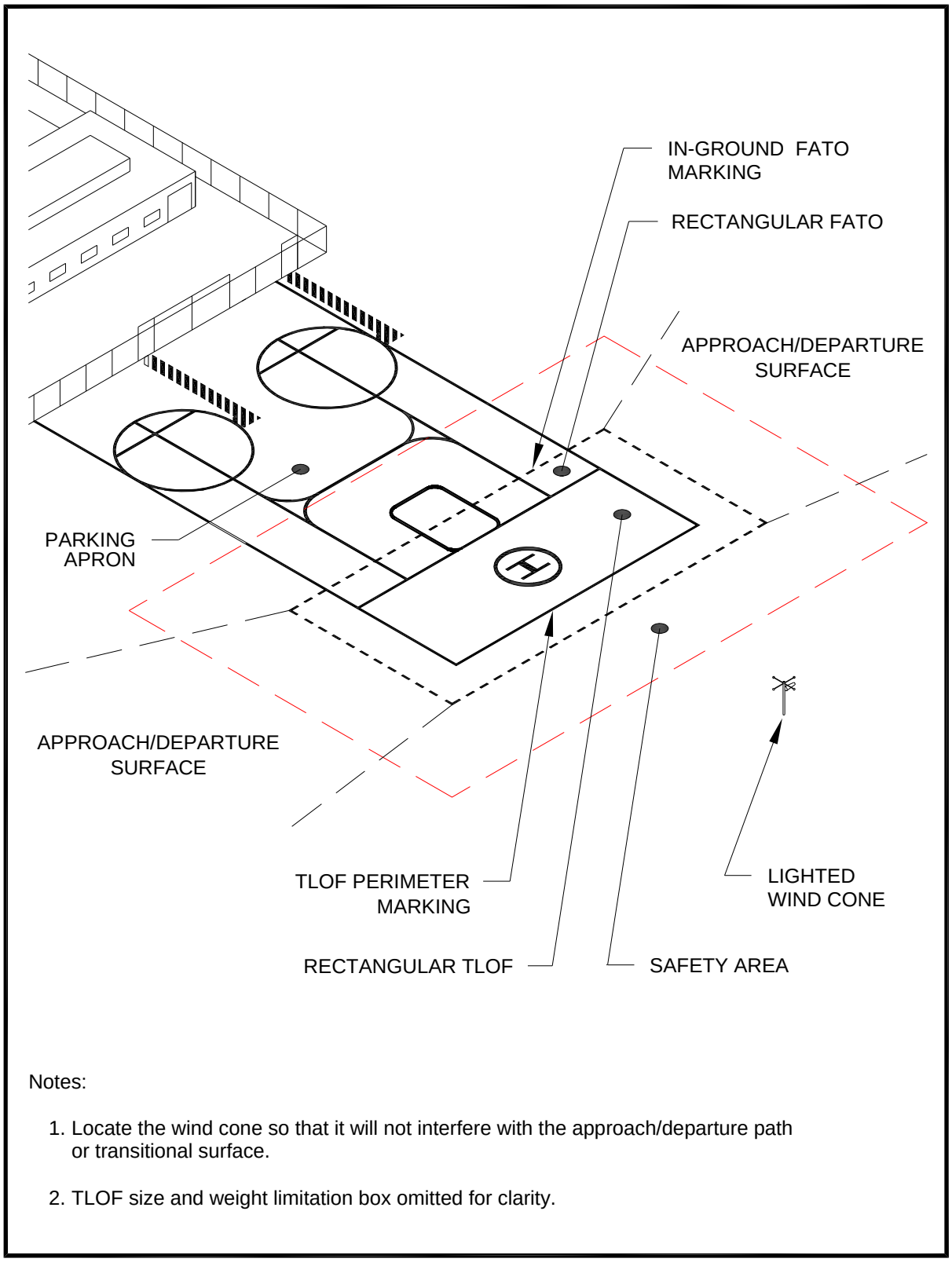


Figure 3–1. Typical Transport Heliport: Transport

305. Basic layout. The heliport consists of a TLOF contained within a FATO. A safety area surrounds the FATO. The relationship of the TLOF to the FATO and the safety area is shown in Figure 3–2. A FATO contains only one TLOF. Provide appropriate approach/departure airspace to allow safe approaches to and departures from landing sites. To the extent feasible, align the preferred approach/departure path with the predominant winds (see paragraph 309). Where helicopter flight manuals specify the minimum size required for operations, take the size into account in the design of the facility.

306. Touchdown and liftoff area (TLOF).

a. TLOF location. The TLOF of a transport heliport is normally at ground level but may be developed with the TLOF located on a pier or, when carefully planned, on the roof of a building. The TLOF is centered in the load-bearing area (LBA), and on the major axis of the FATO.

b. TLOF size. The TLOF is a square or rectangular surface whose minimum length and width is the rotor diameter (RD) of the design helicopter but not less than 50 feet (15.2 m). Increasing the LBA centered on the TLOF may provide some safety and operational advantages.

c. Elongated TLOF: An elongated TLOF can provide an increased safety margin and greater operational flexibility. As an option, design an elongated TLOF with a landing position in the center and two takeoff positions, one at either end, as illustrated in Figure 3–3. Design the landing position to have a minimum length of the RD of the design helicopter, but not less than 50 feet (15.2 m). If the TLOF is elongated, also provide an elongated FATO.

d. Ground-level TLOF surface characteristics.

(1) Design loads. Design the TLOF and any supporting TLOF structure to be capable of supporting the dynamic loads of the design helicopter.

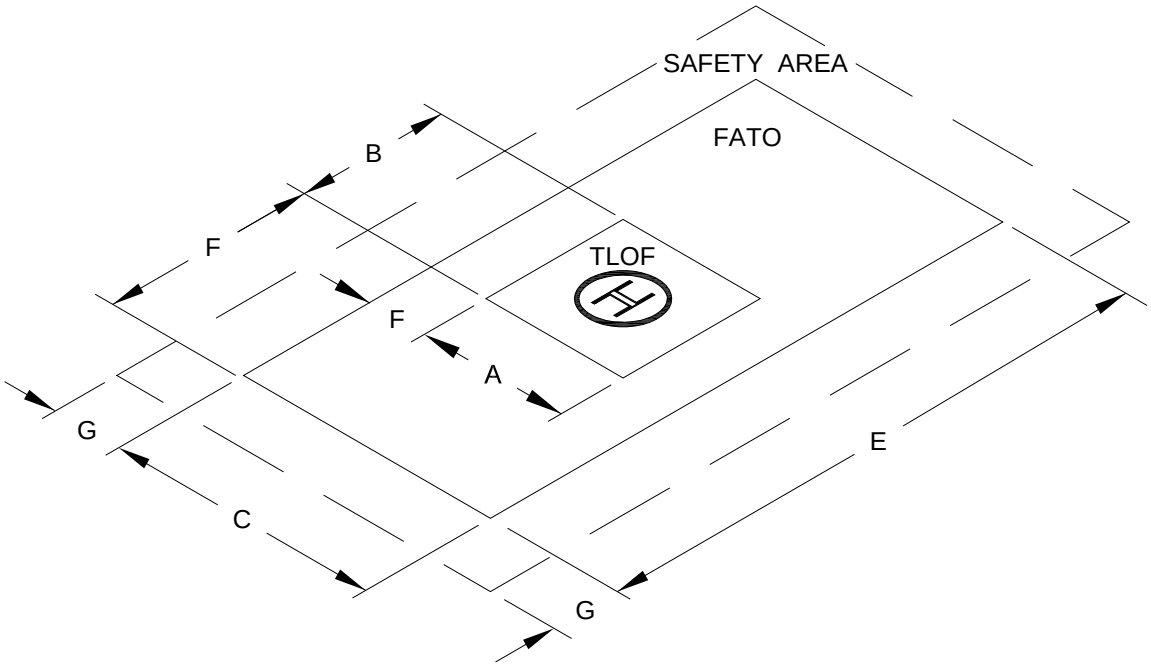
(2) Paving. Construct the TLOF of portland cement concrete (PCC) (see AC 150/5370-10, Standards for Specifying Construction of Airports items P-501) where feasible. Use a broomed or roughened pavement finish to provide a skid-resistant surface for helicopters and non-slippery footing for people.

e. Rooftop and other elevated TLOFs.

(1) Design loads. Design elevated TLOFs and any TLOF supporting structure to be capable of supporting the dynamic loads of the design helicopter. An elevated heliport is illustrated in Figure 3–4.

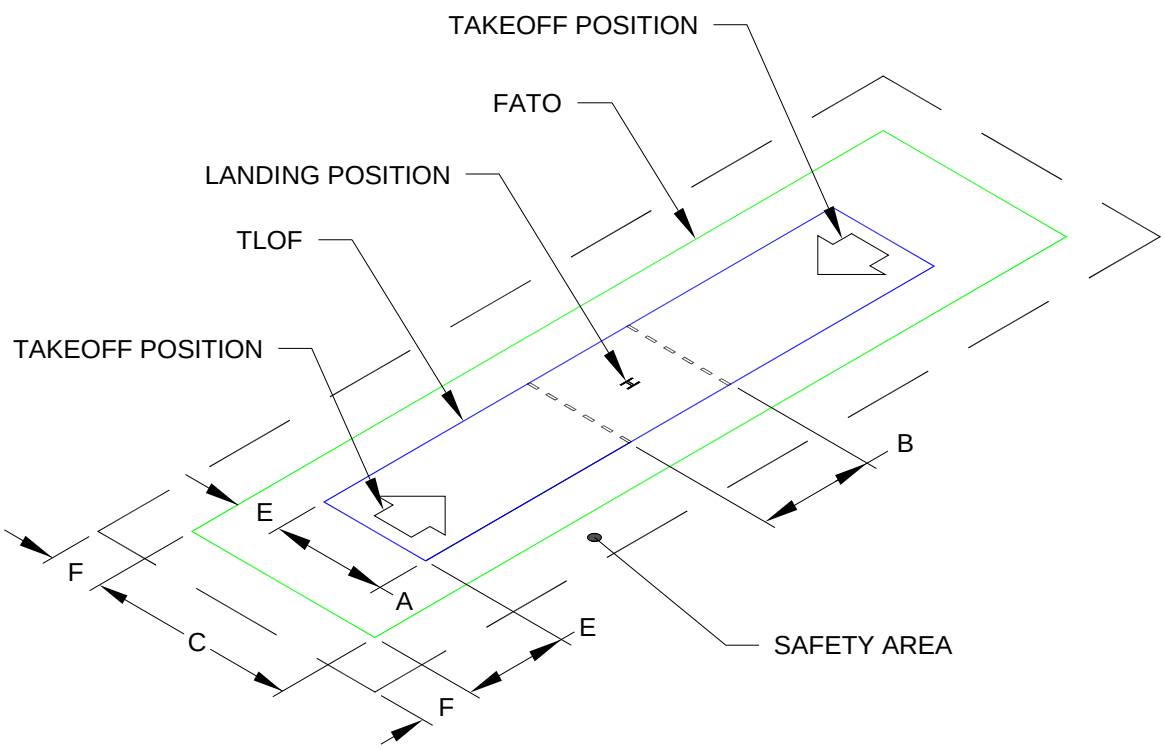
(2) TLOF surface characteristics. Construct rooftop and other elevated heliport TLOFs of metal, concrete, or other materials subject to local building codes. Provide TLOF surfaces with a skid-resistant surface finish for helicopters and non-slippery footing for people.

f. TLOF gradients. Recommended TLOF gradients are defined in Chapter 7.



DIM	ITEM	VALUE	NOTES
A	Minimum TLOF Width	1 RD but not less than 50 ft [15 m]	
B	Minimum TLOF Length	1 RD but not less than 50 ft [15 m]	
C	Minimum FATO Width	2 RD but not less than 100 ft [30 m]	
E	Minimum FATO Length	2 RD but not less than 200 ft [60 m]	See paragraph 306.a.(2) and figure 3-5 for adjustments for elevations above 1,000 ft [304 m]
F	Minimum Separation Between the Perimeters of the TLOF and FATO	3/4 D - 1/2 RD	
G	Minimum Safety Area Width	1/2 RD but not less than 30 ft [9 m]	

Figure 3–2. TLOF/FATO Safety Area Relationships and Minimum Dimensions: Transport



DIM	ITEM	VALUE	NOTES
A	Minimum TLOF Width	1 RD but not less than 50 ft [15 m]	
B	Minimum TLOF/Landing Position Length	1 RD but not less than 50 ft [15 m]	
C	Minimum FATO Width	2 RD but not less than 100 ft [30 m]	
E	Minimum Separation Between the Perimeters of the TLOF and FATO	¾ D - ½ RD	
F	Minimum Safety Area Width	½ RD but not less than 30 ft [9 m]	

Figure 3–3. Elongated FATO with Two Takeoff Positions: Transport

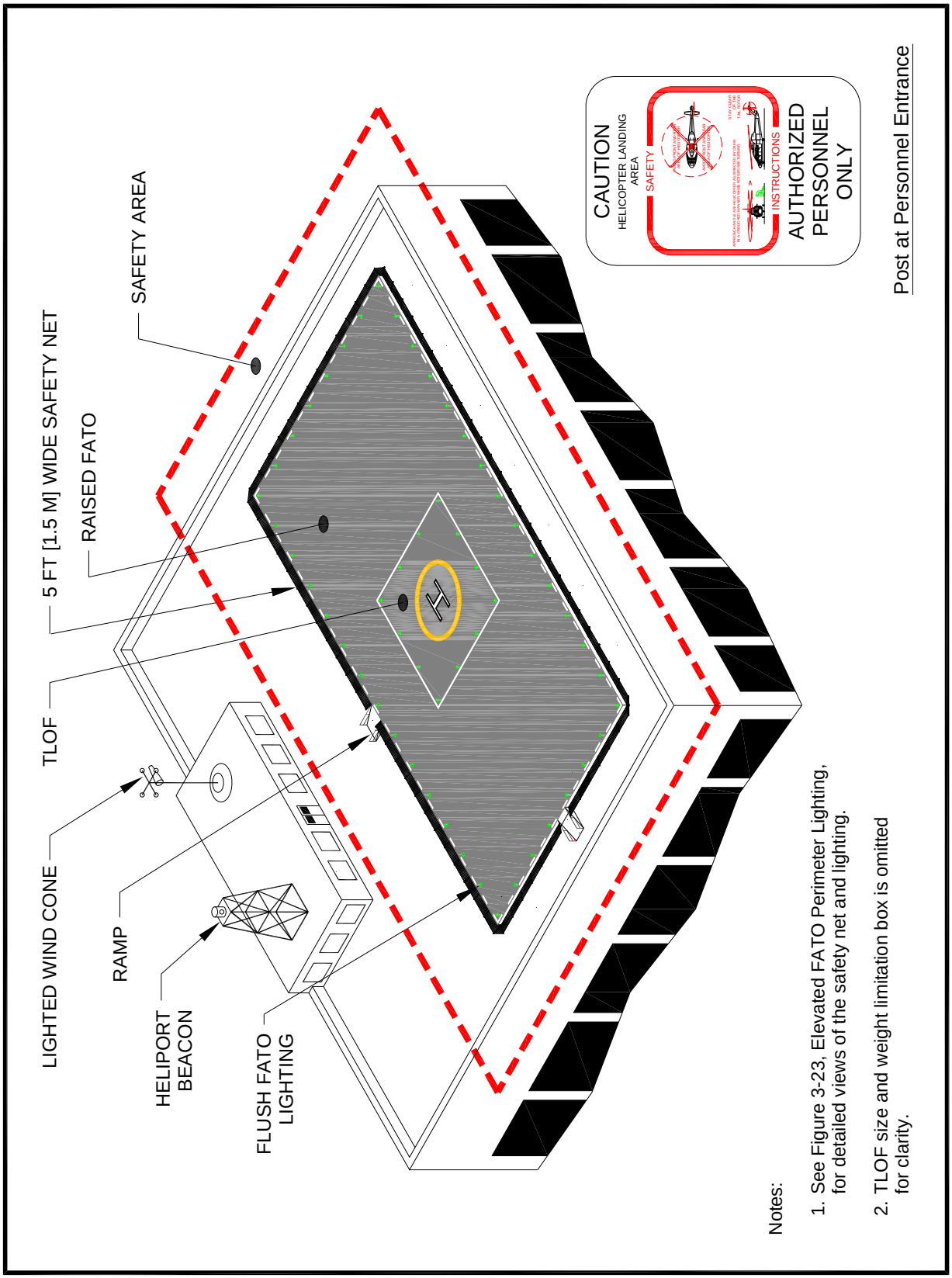


Figure 3–4. Elevated Heliport: Transport

307. Final approach and takeoff area (FATO). A transport heliport has at least one FATO. The FATO contains a TLOF within its borders at which arriving helicopters terminate their approach, and from which departing helicopters take off.

a. FATO size. The FATO is a rectangular surface with the long axis aligned with the preferred flight path. See Figure 3–2.

(1) FATO width. The minimum width of a FATO is at least 2.0 times the RD of the design helicopter but not less than 100 feet (30.5 m).

(2) FATO length. The minimum length of the FATO is 2.0 times the RD of the design helicopter but not less than 200 feet (61 m). At elevations above 1000 feet MSL, a longer FATO is required to provide an increased safety margin and greater operational flexibility. Use the additional FATO length depicted in Figure 3–5.

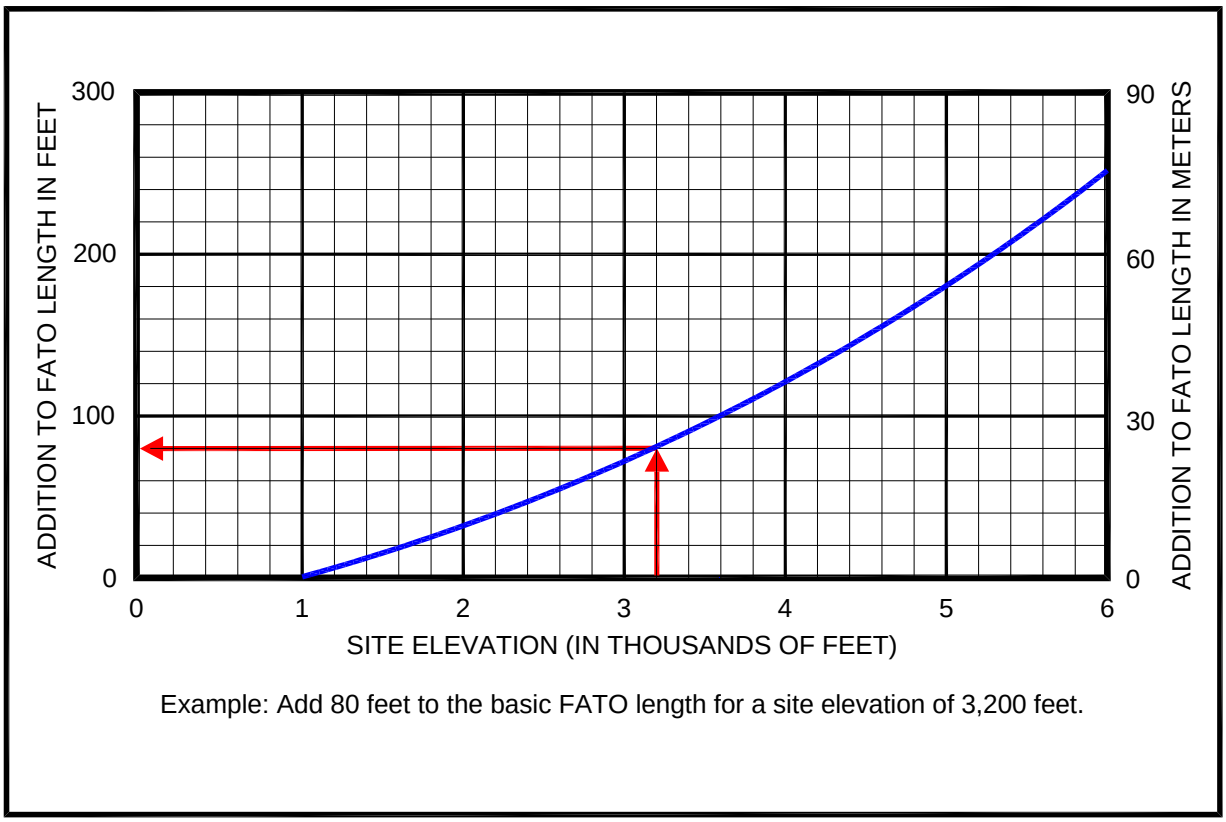


Figure 3–5. Additional FATO Length for Heliports at Higher Elevations: Transport

(3) Design the minimum distance between the TLOF perimeter and the FATO perimeter to be not less than ¾ D - ½ RD, where D and RD are of the design helicopter.

b. FATO surface characteristics.

(1) Design the entire FATO to support the dynamic loads of the design helicopter.

(2) If the FATO surface is unpaved, treat it to prevent loose stones and any other flying debris caused by rotor wash.

(3) Design the portion of the FATO abutting the TLOF to be contiguous with the TLOF, with the adjoining edges at the same elevation.

c. Rooftop and other elevated FATOs.

(1) Design loads. Design elevated FATOs and any FATO supporting structure to be capable of supporting the dynamic loads of the design helicopter

(2) Elevation. Elevate the FATO above the level of any object in the safety area that cannot be removed.

(3) Obstructions. Elevator penthouses, cooling towers, exhaust vents, fresh air vents, and other raised features can affect heliport operations. Establish control mechanisms to ensure obstruction hazards are not installed after the heliport is operational.

(4) Air quality. Helicopter exhaust can affect building air quality if the heliport is too close to fresh air vents. When designing a building intended to support a helipad, locate fresh air vents accordingly. When adding a helipad to an existing building, relocate fresh air vents if necessary or, if relocation is not practical, installing charcoal filters or a fresh air intake bypass louver system for HVAC systems may be adequate.

(5) FATO surface characteristics. Construct rooftop and other elevated heliport FATOs of metal, concrete, or other materials subject to local building codes. Provide the FATO surface with non-slippery footing for people.

(6) Safety net. If the platform is elevated 4 feet (1.2 m) or more above its surroundings, Title 29 CFR Part 1910.23, Guarding Floor and Wall Openings and Holes, requires the provision of fall protection. The FAA recommends such protection for all platforms elevated 30 inches (76 cm) or more. However, do not use permanent railings or fences since they would be safety hazards during helicopter operations. As an option, install a safety net, meeting state and local regulations but not less than 5 feet (1.5 m) wide. Design the safety net to have a load-carrying capability of 50 lb/sq ft (244 kg/sq m). Do not allow the net, as illustrated in Figure 3–23, to project above the level of the FATO. Fasten both the inside and outside edges of the safety net to a solid structure. Construct nets of materials that are resistant to environmental effects.

(7) Access to elevated FATOs. Title 29 CFR Part 1926.34, Means of Egress, requires two separate access points for an elevated structure such as one supporting an elevated FATO. Design stairs in compliance with Title 29 CFR Part 1910.24, Fixed Industrial Stairs. Design handrails required by this standard to fold down or be removable to below the level of the FATO so they will not be hazards during helicopter operations.

d. Mobile objects within the FATO. The FATO design standards in this AC assume the TLOF and FATO are closed to other aircraft if a helicopter or other mobile object is within the FATO or the safety area.

e. Fixed objects within the FATO. Remove all fixed objects projecting above the FATO elevation except for lighting fixtures, which may project a maximum of 2 inches (5 cm). See Figure 7–3. For ground level heliports, remove all above-ground objects to the extent practicable.

f. FATO/FATO separation. If a heliport has more than one FATO, separate the perimeters of two FATOs so the respective safety areas do not overlap. This separation assumes simultaneous approach/departure operations will not take place. If the heliport operator intends for the facility to support simultaneous operations, provide a minimum 200 foot (61 m) separation.

g. FATO gradients. Recommended FATO gradients are defined in Chapter 7.

308. Safety area. The safety area surrounds the FATO.

a. Safety area width. The safety area extends outward on all sides of the FATO for a distance of at least ½ RD but not less than 30 feet (9 m).

b. Mobile objects within the safety area. The safety area design standards of this AC assume the TLOF and FATO are closed to other aircraft if a helicopter or other mobile object is within the FATO or the safety area.

c. Fixed objects within a safety area. Remove all fixed objects within a safety area projecting above the FATO elevation except for lighting fixtures, which may project a maximum of 2 inches (5 cm). See Figure 7–3. For ground level heliports, remove all above-ground objects to the extent practicable.

d. Safety area surface. The safety area need not be load bearing. Figure 3–6 depicts a safety area extending over water. If possible, make the portion of the safety area abutting the FATO contiguous with the FATO with the adjoining edges at the same elevation. This is needed to avoid the risk of catching a helicopter skid or wheel. Clear the safety area of flammable materials and treat the area to prevent loose stones and any other flying debris caused by rotor wash.

e. Safety area gradients. Safety area gradients are detailed in Chapter 7.

309. VFR approach/departure paths. The purpose of approach/departure airspace, shown in Figure 3–7 and Figure 3–8, is to provide sufficient airspace clear of hazards to allow safe approaches to and departures from the TLOF.

a. Number of approach/departure paths. Align preferred approach/departure paths with the predominant wind direction so downwind operations are avoided and crosswind operations are kept to a minimum. To accomplish this, design a transport heliport to have more than one approach/departure path. Base other approach/departure paths on the assessment of the prevailing winds or, when this information is not available, separate such flight paths and the preferred flight path by at least 135 degrees. See Figure 3–7.

b. VFR Approach/Departure and Transitional Surfaces. Figure 3–7 and Figure 3–8 illustrate the approach/departure and transitional surfaces.

(1) An approach/departure surface is centered on each approach/departure path. The approach /departure path starts at the edge of the FATO and slopes upward at 8:1 (8 units horizontal in 1 unit vertical) for a distance of 4,000 feet (1,219 m) where the width is 500 feet (152 m) at a height of 500 feet (152 m) above the heliport elevation.

(2) The transitional surfaces start from the edges of the FATO parallel to the flight path center line, and from the outer edges of approach/departure surface, and extend outwards at a slope of 2:1 (2 units horizontal in 1 units vertical) for a distance of 250 feet (76 m) from the centerline. The transitional surfaces start at the edge of the FATO parallel to the approach/departure surfaces and extend to the end of the approach/departure surface. The transitional surface does not apply on the FATO edge opposite the approach/departure surface.

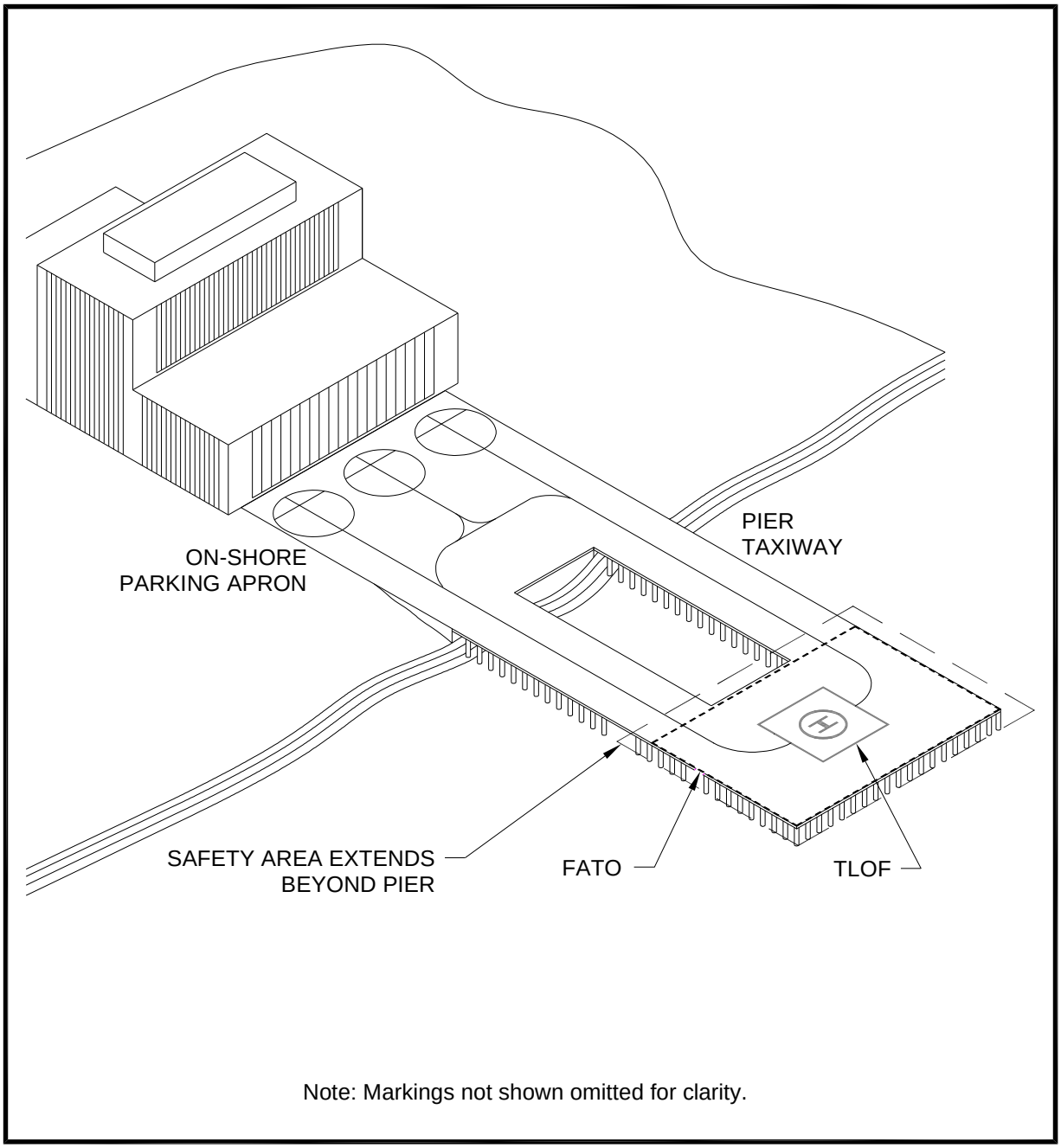


Figure 3–6. Non-load-bearing Safety Area: Transport

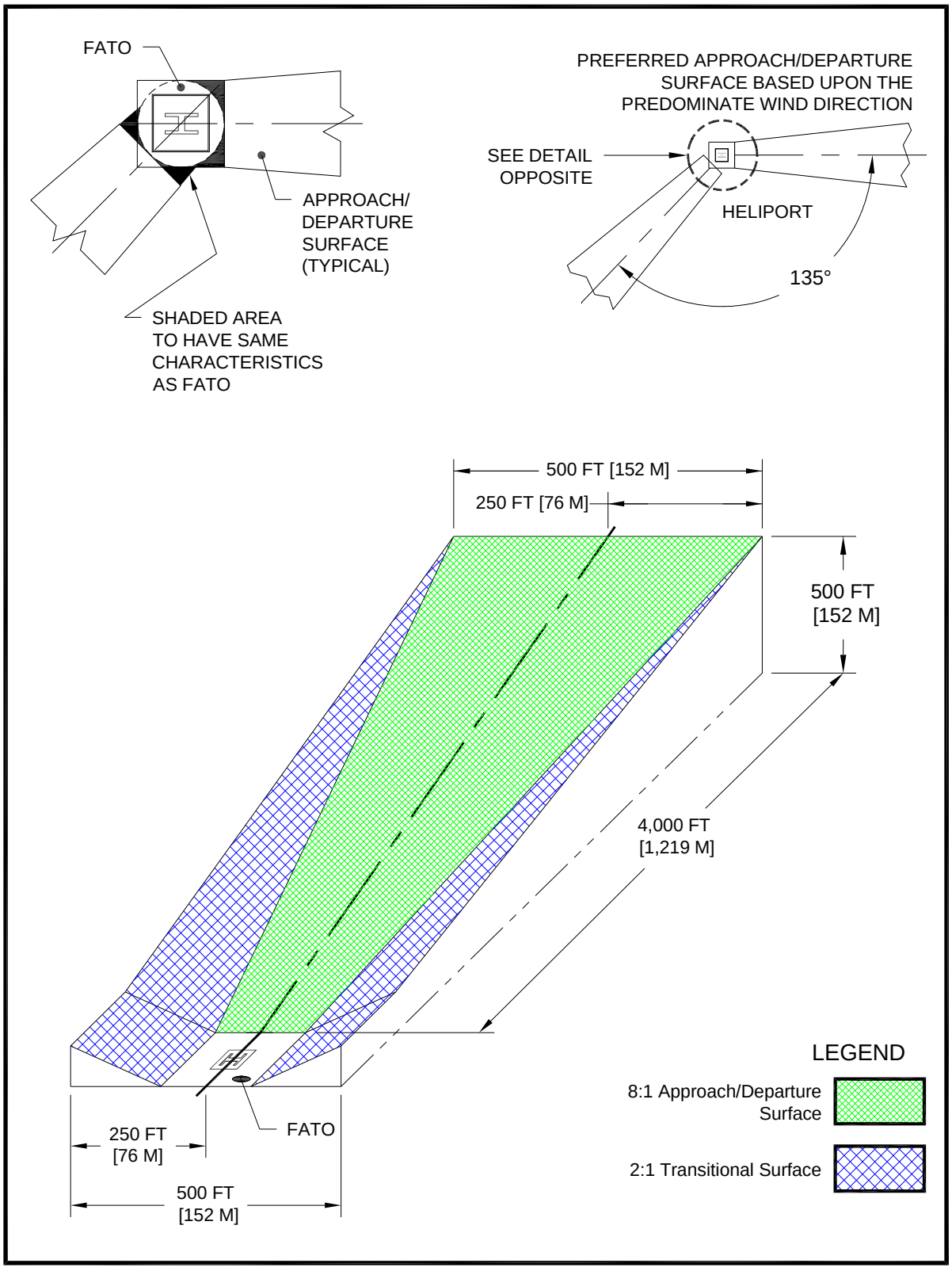


Figure 3–7. VFR Heliport Approach/Departure and Transitional Surfaces: Transport

(3) Make sure the approach/departure and transitional surfaces are free of penetrations unless an FAA aeronautical study determines such penetrations not to be hazards. The FAA conducts such aeronautical studies only at public heliports and private airports with FAA-approved approach procedures. Paragraph 111 provides additional information on hazards to air navigation.

c. Curved VFR approach/departure paths. As an option, include one curve in VFR approach/departure paths. As an option, design these paths to use the airspace above public lands, such as freeways or rivers. When including a curved portion in the approach/departure path, make sure the sum of the radius of arc defining the center line and the length of the straight portion originating at the FATO is not less than 1,886 feet (575 m). Design the approach/departure path so the minimum radius of the curve is 886 feet (270 m) and that the curve follows a 1,000 feet (305 m) straight section. Design the approach/departure path so the combined length of the center line of the curved portion and the straight portion is 4,000 feet (1,219 m). See Figure 3–8.

d. Flight path alignment guidance. As an option, use flight path alignment markings and/or flight path alignment lights (see paragraphs 301.d and 301.g) where it is desirable and practicable to indicate available approach and/or departure flight path direction(s). See Figure 3–9.

e. Periodic review of obstructions. Vigilant heliport operators reexamine obstacles in the vicinity of approach/departure paths on at least an annual basis. This reexamination includes an appraisal of the growth of trees near approach and departure paths. Paragraph 111 provides additional information on hazards to air navigation. Pay particular attention to obstacles that need to be marked or lighted. It may be helpful to maintain a list of the GPS coordinates and the peak elevation of obstacles.

310. Heliport protection zone (HPZ). The FAA recommends the establishment of an HPZ for each approach/departure surface. The HPZ is the area under the approach/departure surface starting at the FATO perimeter and extending out for a distance of 400 feet (122 m), as illustrated in Figure 3–10. The HPZ is intended to enhance the protection of people and property on the ground. This is achieved through heliport owner control over the HPZ. Such control includes clearing HPZ areas (and maintaining them clear) of incompatible objects and activities. The FAA discourages residences and places of public assembly in an HPZ. (Churches, schools, hospitals, office buildings, shopping centers, and other uses with similar concentrations of persons typify places of public assembly.) Do not locate hazardous materials, including fuel, in the HPZ.

311. Wind cone.

a. Specification. Use a wind cone conforming to AC 150/5345-27, Specification for Wind Cone Assemblies, to show the direction and magnitude of the wind. Use a color that provides the best possible color contrast to its background.

b. Wind cone location. Locate the wind cone so it provides the pilot with valid wind direction and speed information in the vicinity of the heliport under all wind conditions.

(1) At many landing sites, there may be no single, ideal location for the wind cone. At other sites, it may not be possible to site a wind cone at the ideal location. In such cases, install more than one wind cone in order to provide the pilot with all the wind information needed for safe operations.

(2) Place the wind cone so a pilot on the approach path can see it clearly when the helicopter is 500 feet (150 m) from the TLOF.

(3) Place the wind cone so pilots can see it from the TLOF.

(4) To avoid presenting an obstruction hazard, locate the wind cone(s) outside the safety area, and so it does not penetrate the approach/departure or transitional surfaces.

c. Wind cone lighting. For night operations, illuminate the wind cone, either internally or externally, to ensure it is clearly visible.

312. Taxiways and taxi routes. Taxiways and taxi routes provide for the movement of helicopters from one part of a landing facility to another. They provide a connecting path between the FATO and a parking area. They also provide a maneuvering aisle within the parking area. A taxi route includes the taxiway plus the appropriate clearances needed on both sides. The relationship between a taxiway and a taxi route is illustrated in Figure 3–11.

a. Taxiway/taxi route widths. The dimensions of taxiways and taxi routes are a function of helicopter size and type of taxi operations (ground taxi or hover taxi). Find these dimensions in Table 3-1. Normally, the requirement for hover taxi dictates the taxiway/taxi route widths. However, when the fleet comprises a combination of large ground taxiing helicopters and smaller air taxiing helicopters, the larger aircraft may dictate the taxiway/taxi route widths. If wheel-equipped helicopters taxi with wheels not touching the surface, design the facility with hover taxiway widths rather than ground taxiway widths. Where the visibility of the centerline marking cannot be guaranteed at all times, such as locations where snow or dust commonly obscure the centerline marking and it is not practical to remove it, determine the minimum taxiway/taxi route dimensions as if there was no centerline marking.

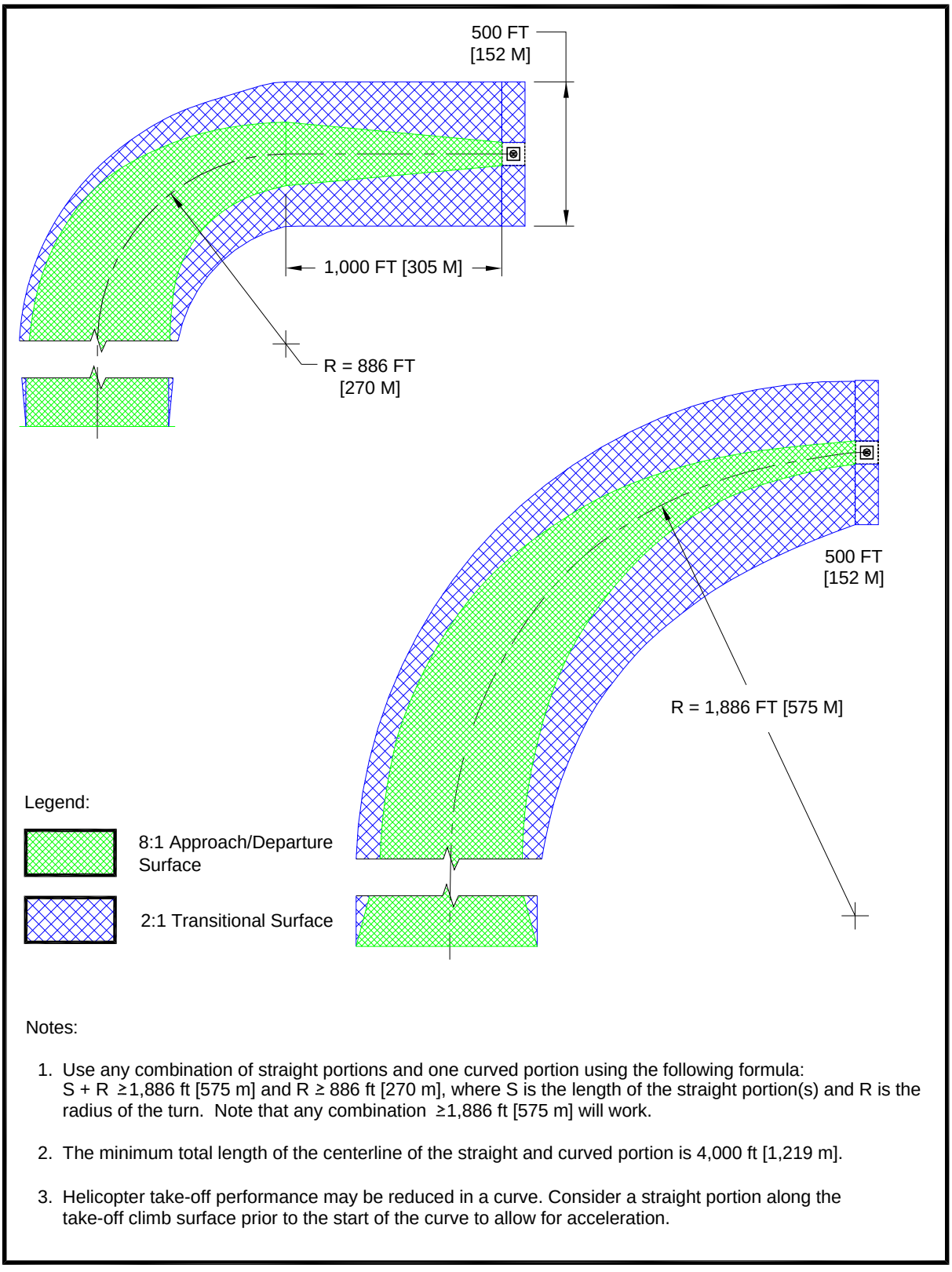
b. Surfaces. For ground taxiways, provide a portland cement concrete or asphalt surface. For unpaved portions of taxi routes, provide a turf cover or treat the ground in some way to prevent dirt and debris from being raised by a taxiing helicopter's rotor wash.

c. Gradients. See Chapter 7 for taxiway and taxi route gradient standards.

313. Helicopter parking. A transport heliport has a paved apron for parking helicopters. The size of the apron depends on the number and size of specific helicopters to be accommodated. It is not necessary that every parking position accommodate the design helicopter. Design individual parking positions to accommodate the helicopter size and weight expected to use the parking position at the facility. However, use the design helicopter to determine the separation between parking positions and taxi routes. Use the larger helicopter to determine the separation between parking positions intended for helicopters of different sizes. Design parking positions to support the static loads of the helicopter intended to use the parking area. Ground taxi turns of wheeled helicopters are significantly larger than a hover turn. Consider the turn radius of helicopters when designing taxi intersections and parking positions for wheeled helicopters. Design heliport parking areas so helicopters will be parked in an orientation that keeps the "avoid areas" around the tail rotors (see Figure 3–12) clear of passenger walkways. Establish separate aprons for specific functions such as passenger boarding, maintenance, and parking of based and transient helicopters.

Table 3-1. Taxiway and Taxi Route Dimensions – Transport Heliports

Taxiway (TW)	Centerline Marking Type	TW Edge Marking Type	Minimum Width of Paved Area	Lateral Separation Between TW Edge Markings	Total Taxi Route Width
Ground Taxiway	Painted	Painted	2 x UC	2 x UC	1½ RD
Hover Taxi	Painted	Painted	2 x UC	2 x UC	2 RD
RD: rotor diameter of the design helicopter TW: taxiway UC: undercarriage length or width (whichever is larger) of the design helicopter					



Notes:

1. Use any combination of straight portions and one curved portion using the following formula: S + R ≥1,886 ft [575 m] and R ≥ 886 ft [270 m], where S is the length of the straight portion(s) and R is the radius of the turn. Note that any combination ≥1,886 ft [575 m] will work.

2. The minimum total length of the centerline of the straight and curved portion is 4,000 ft [1,219 m].

3. Helicopter take-off performance may be reduced in a curve. Consider a straight portion along the take-off climb surface prior to the start of the curve to allow for acceleration.

Figure 3–8. Curved Approach/Departure: Transport

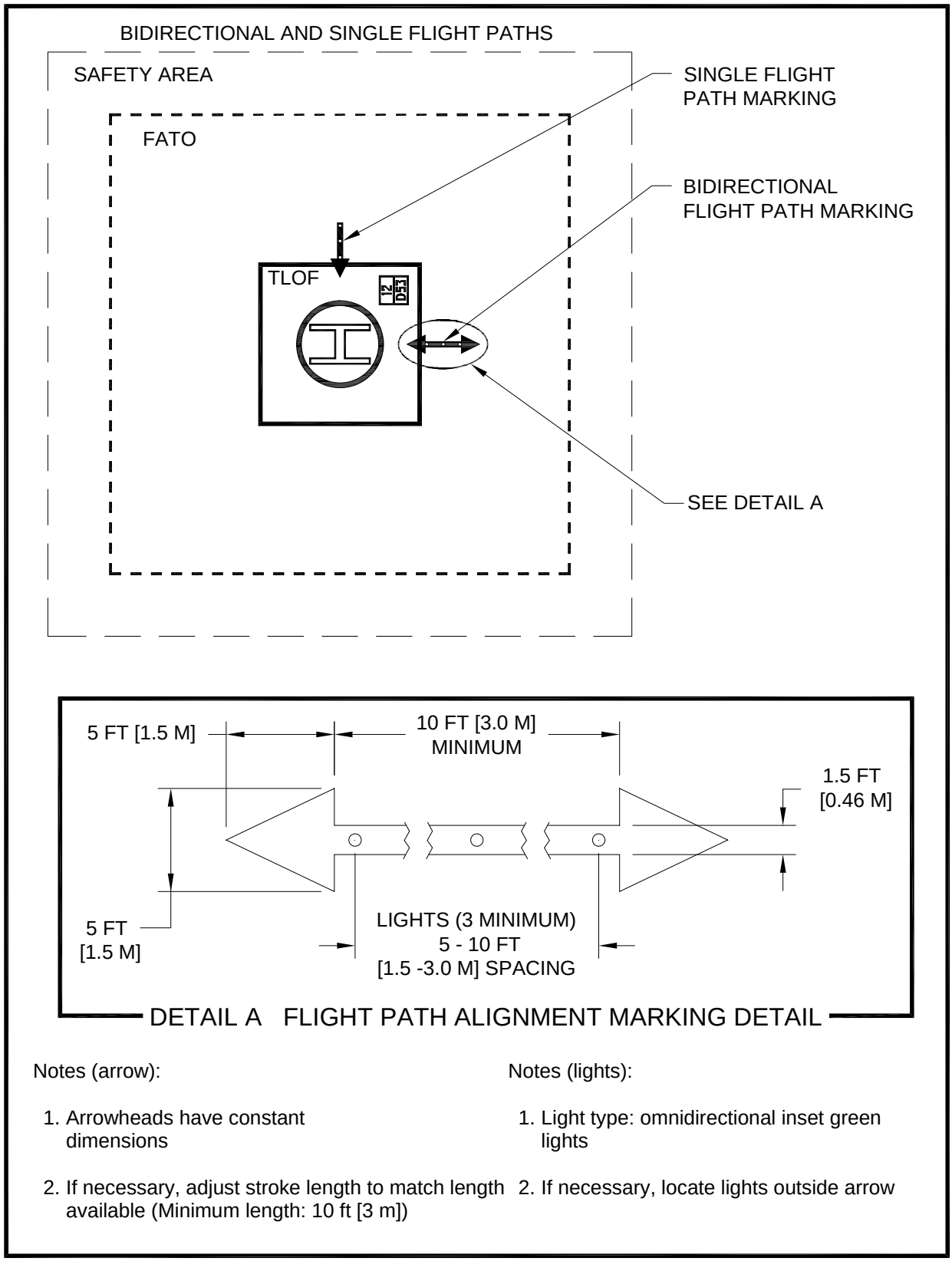


Figure 3–9. Flight Path Alignment Marking and Lights: Transport

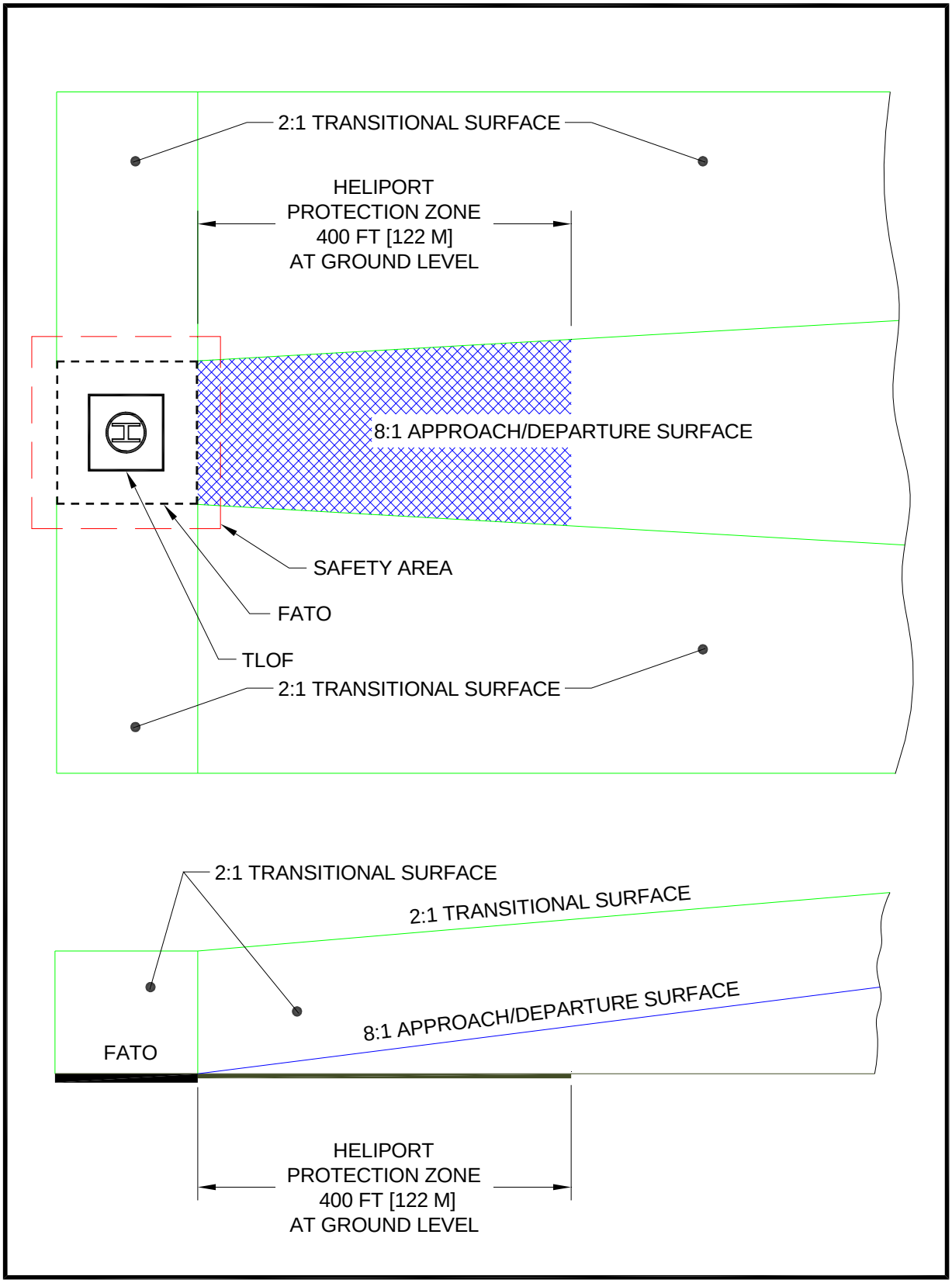


Figure 3–10. Heliport Protection Zone: Transport

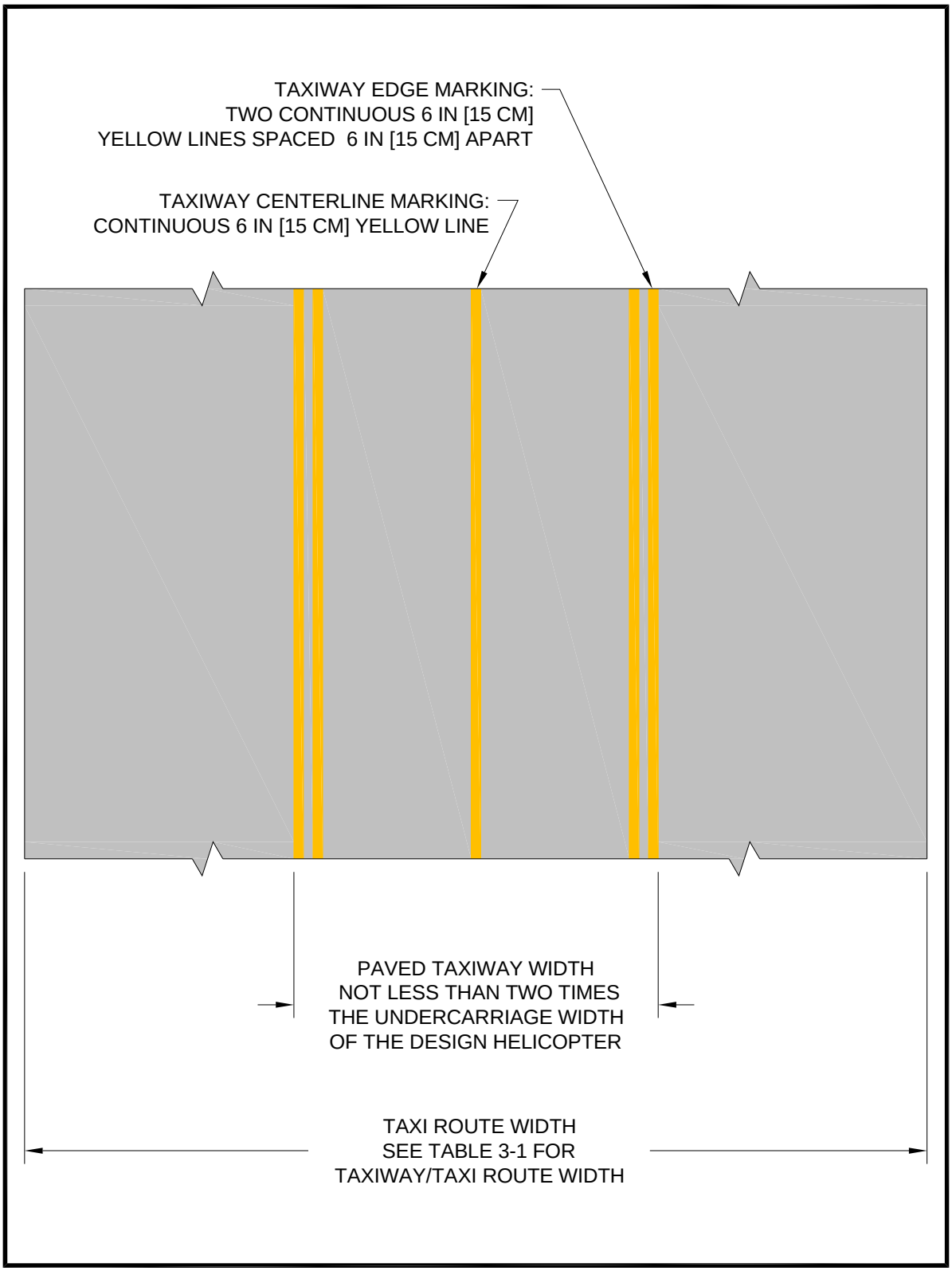
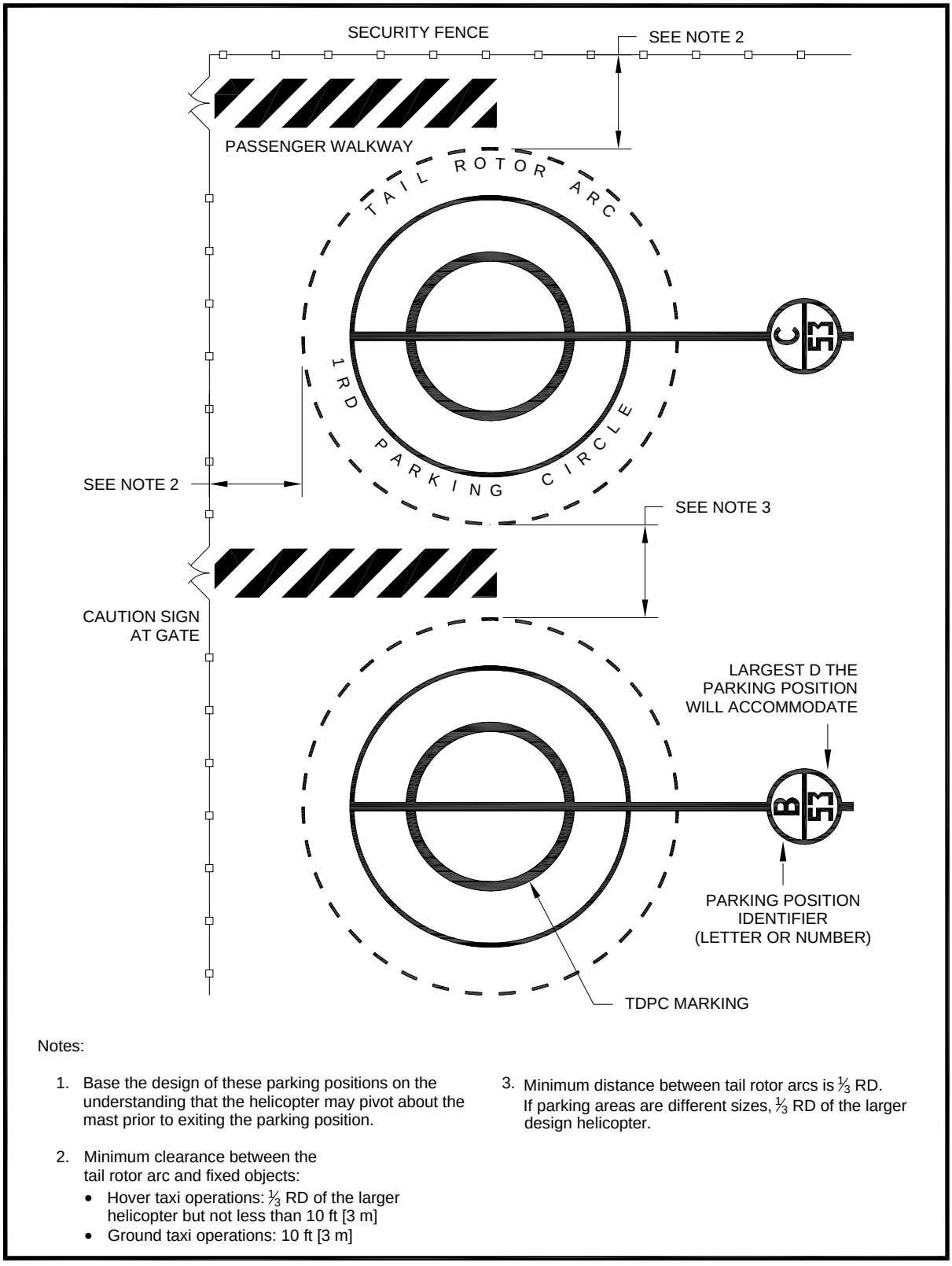


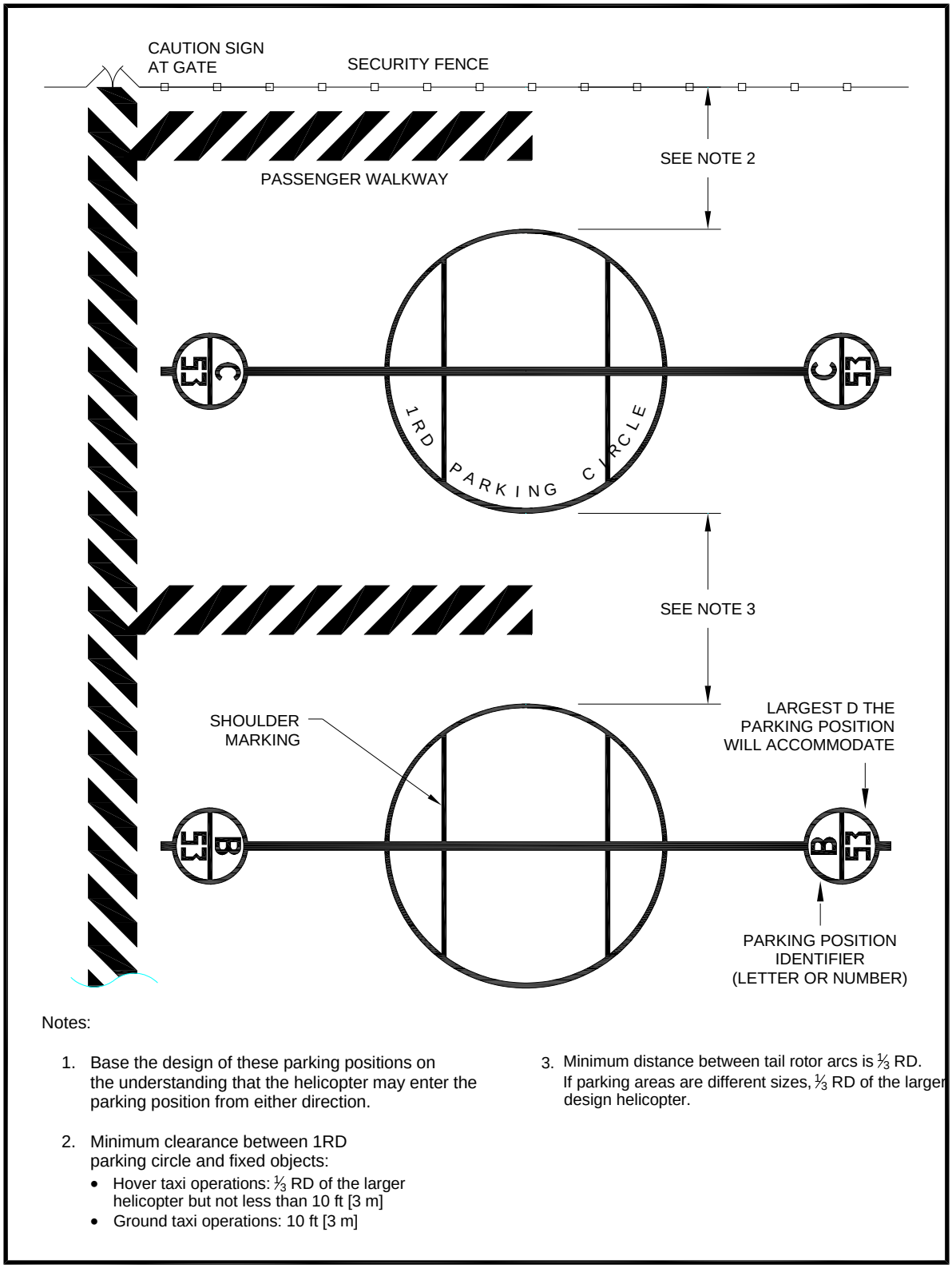
Figure 3–11. Taxiway/Taxi Route Relationship, Centerline and Edge Marking: Transport



Notes:

1. Base the design of these parking positions on the understanding that the helicopter may pivot about the mast prior to exiting the parking position.
2. Minimum clearance between the tail rotor arc and fixed objects:
   - Hover taxi operations: ⅓ RD of the larger helicopter but not less than 10 ft [3 m]
   - Ground taxi operations: 10 ft [3 m]
3. Minimum distance between tail rotor arcs is ⅓ RD. If parking areas are different sizes, ⅓ RD of the larger design helicopter.

Figure 3–12. "Turn-around" Helicopter Parking Position Marking: Transport



Notes:

1. Base the design of these parking positions on the understanding that the helicopter may enter the parking position from either direction.
2. Minimum clearance between 1RD parking circle and fixed objects:
   - Hover taxi operations: ⅓ RD of the larger helicopter but not less than 10 ft [3 m]
   - Ground taxi operations: 10 ft [3 m]
3. Minimum distance between tail rotor arcs is ⅓ RD. If parking areas are different sizes, ⅓ RD of the larger design helicopter.

Figure 3–13. "Taxi-through" Helicopter Parking Position Marking: Transport

a. Location. Do not locate aircraft parking areas under an approach/departure surface. As an option, allow aircraft parking areas under the transitional surfaces.

(1) For "turn around" parking positions, locate the parking position to provide a minimum distance between the tail rotor arc and any object, building, or safety area. The standard for this distance is 10 feet (3 m) for ground taxi operations and the greater of 10 feet (3 m) or $^{1}/_{3}$ RD for hover taxi operations. See Figure 3–12 and Figure 3–14.

(2) For "taxi-through" parking positions, locate the parking position to provide a minimum distance between the main rotor circle and any object, building, or safety area. The standard for this distance is 10 feet (3 m) for ground taxi operations and the greater of 10 feet (3 m) or $^{1}/_{3}$ RD for hover taxi operations. See Figure 3–13 and Figure 3–15.

(3) Locate the parking position to provide a minimum distance between the tail rotor arc and the edge of any taxi route. The standard for this distance is ½ RD but not less than 30 feet (9.1 m).

b. Size. Parking position sizes are dependent upon the helicopter size. The clearances between parking positions are dependent upon the type of taxi operations (ground-taxi or hover/ taxi) and the intended paths for maneuvering in and out of the parking position. The more demanding operation will dictate what is needed at a particular site. Usually, the parking area needs for skid-equipped helicopters will be the most demanding. However, when the largest helicopter is a very large, wheeled aircraft (for example, the S-61), and the skid-equipped helicopters are all much smaller, the parking size needs for wheeled helicopters may be the most demanding. If wheel-equipped helicopters taxi with wheels not touching the surface, design parking areas based on hover taxi operations rather than ground taxi operations.

(1) If all parking positions are the same size, design them to be large enough to accommodate the largest helicopter that will operate at the heliport.

(2) As an option when there is more than one parking position, design the facility with parking positions of various sizes with at least one position that will accommodate the largest helicopter that will park at the heliport. Design other parking positions to be smaller, for the size of the individual or range of individual helicopters parking at that position.

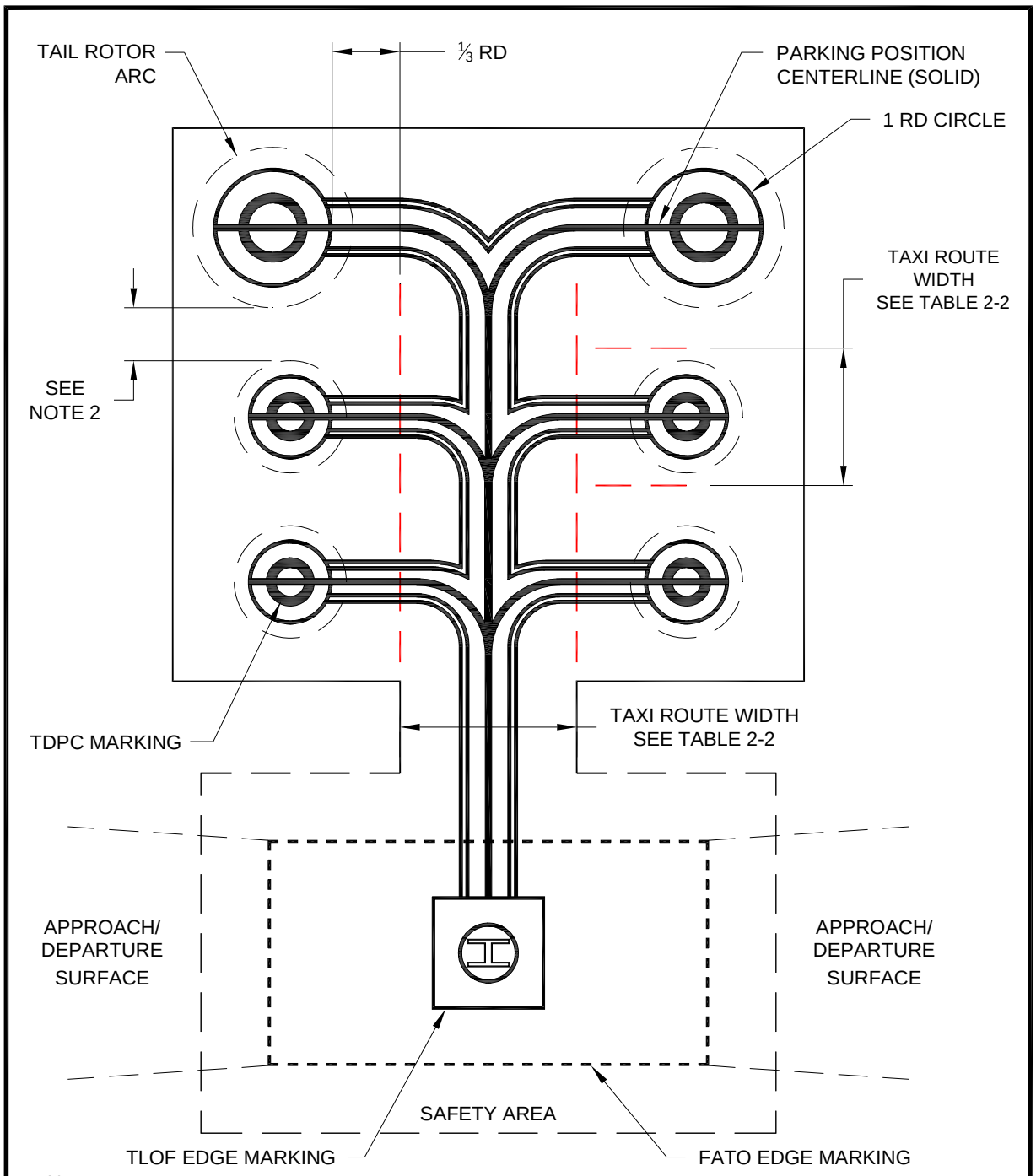
(3) "Turn-around" parking positions are illustrated in Figure 3–14.

(4) "Taxi-through" parking positions are illustrated in Figure 3–15. When using this design for parking positions, the heliport owner and operator take steps to ensure all pilots are informed that "turn-around" departures from the parking position are not permitted.

(5) Do not design "back-out" parking positions at transport heliports.

c. Passenger walkways., Provide marked walkways at parking positions. Locate passenger walkways to minimize passenger exposure to various risks during passenger loading and unloading. Design the pavement so spilled fuel does not drain onto passenger walkways or toward parked helicopters.

d. Fueling. Design the facility to allow fueling with the use of a fuel truck or a specific fueling area with stationary fuel tanks.

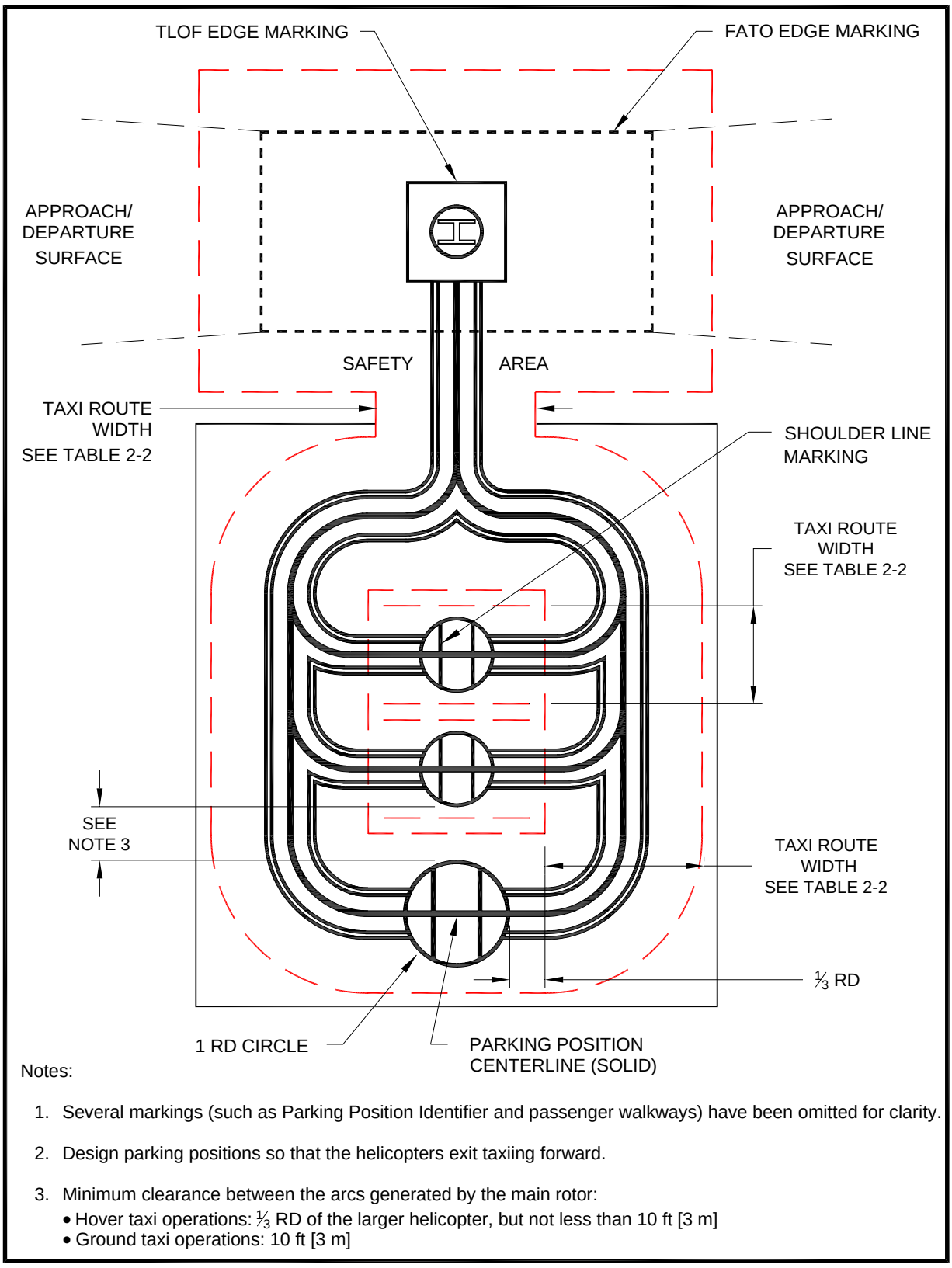


Notes:

1. Several markings (such as Parking Position Identifier and passenger walkways) have been omitted for clarity.

2. Minimum clearance between the tail rotor arcs :
   - Hover taxi operations: ⅓ RD of the larger helicopter, but not less than 10 ft [3 m]
   - Ground taxi operations: 10 ft [3 m]

Figure 3–14. Parking Area Design – "Turn-around" Parking Positions: Transport



Notes:

1. Several markings (such as Parking Position Identifier and passenger walkways) have been omitted for clarity.
2. Design parking positions so that the helicopters exit taxiing forward.
3. Minimum clearance between the arcs generated by the main rotor:
   - Hover taxi operations: ⅓ RD of the larger helicopter, but not less than 10 ft [3 m]
   - Ground taxi operations: 10 ft [3 m]

Figure 3–15. Parking Area Design – "Taxi-through" Parking Position

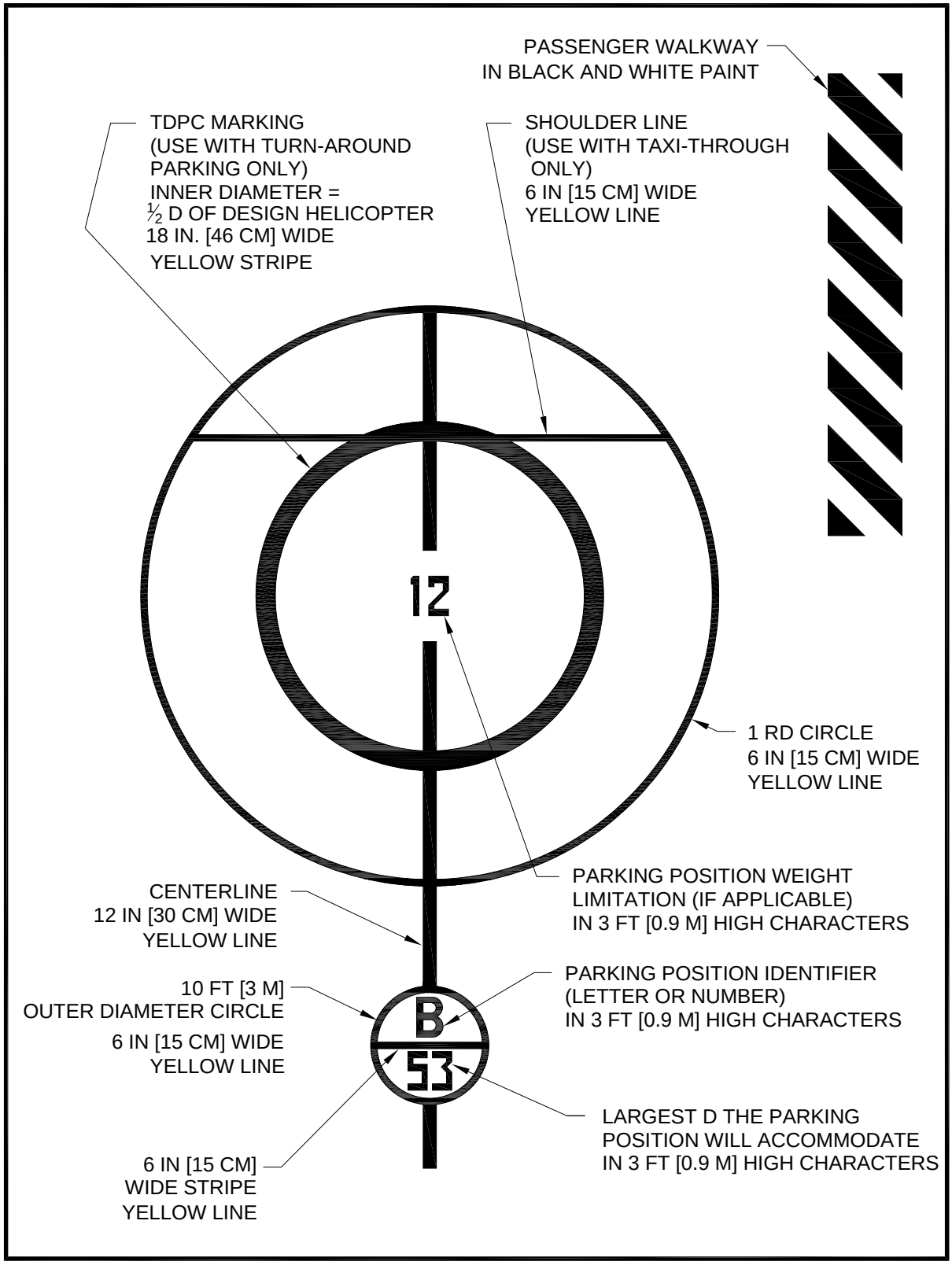


Figure 3–16. Parking Position Identification, Size and Weight Limitations: Transport

(1) Various federal, state, and local requirements for petroleum handling facilities apply to systems for storing and dispensing fuel. Find guidance in AC 150/5230-4, Aircraft Fuel Storage, Handling, and Dispensing on Airports. Find additional information in various National Fire Protection Association (NFPA) publications. For a list of more resources, see Appendix D.

(2) Do not locate fueling equipment in the TLOF, FATO, or safety area. Design separate fueling locations and mark them to minimize the potential for helicopters to collide with the dispensing equipment. Design fueling areas so there is no object tall enough to be hit by the main or tail rotor blades within a distance of RD of the design helicopter from the center point of the position where the helicopter is fueled (providing ½ RD clearance from the rotor tips). If this is not practical at an existing facility, install long fuel hoses.

(3) Lighting. Light the fueling area if night fueling operations are contemplated. Ensure any light poles do not constitute an obstruction hazard.

e. Tiedowns. Install recessed tiedowns to accommodate extended or overnight parking of based or transient helicopters. Ensure any depression associated with the tiedowns is of a diameter not greater than one-half the width of the smallest helicopter landing wheel or landing skid anticipated to be operated on the heliport surface. In addition, provide storage for tiedown chocks, chains, cables, and ropes off the heliport surface to avoid fouling landing gear. Find guidance on tiedowns in AC 20-35, Tiedown Sense.

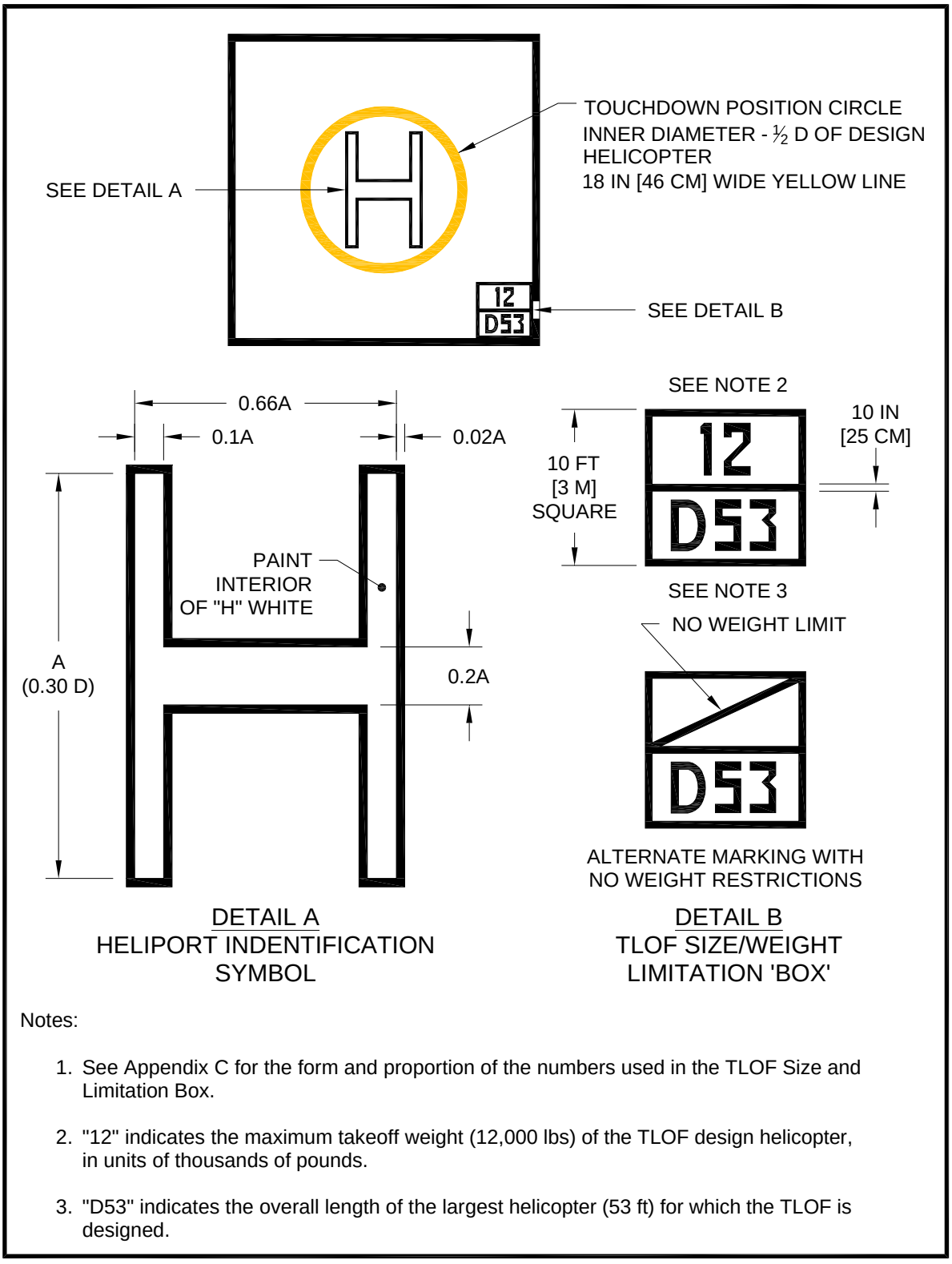
314. Heliport markers and markings. Markers and/or surface markings identify the facility as a heliport. Use surface markings of paint or preformed material. (See AC 150/5370-10, Item P-620, for specifications for paint and preformed material). As an option, use reflective paint and reflective markers, though remember overuse of reflective material can be blinding to a pilot using landing lights. As an option, outline lines/markings with a 6-inch (15 cm) wide line of a contrasting color to enhance conspicuity. Place markings that define the edges of a TLOF, FATO, taxiway or apron within the limits of those areas. Use the following markers and markings.

a. Heliport identification marking. The identification marking identifies the location as a heliport, marks the TLOF and provides visual cues to the pilot. The marking consists of a white “H.” The “H” has a minimum height of 0.3 D. Locate the “H” in the center of the TLOF and orient it on the axis of the preferred approach/departure path. Place a one-foot wide bar under the “H” when it is necessary to distinguish the preferred approach/departure direction. The proportions and layout of the letter “H” are illustrated in Figure 3–17.

b. TLOF markings.

(1) TLOF perimeter marking. Define the perimeter of a TLOF with a continuous 12-inch (30 cm) wide, white line, as shown in Figure 3–18.

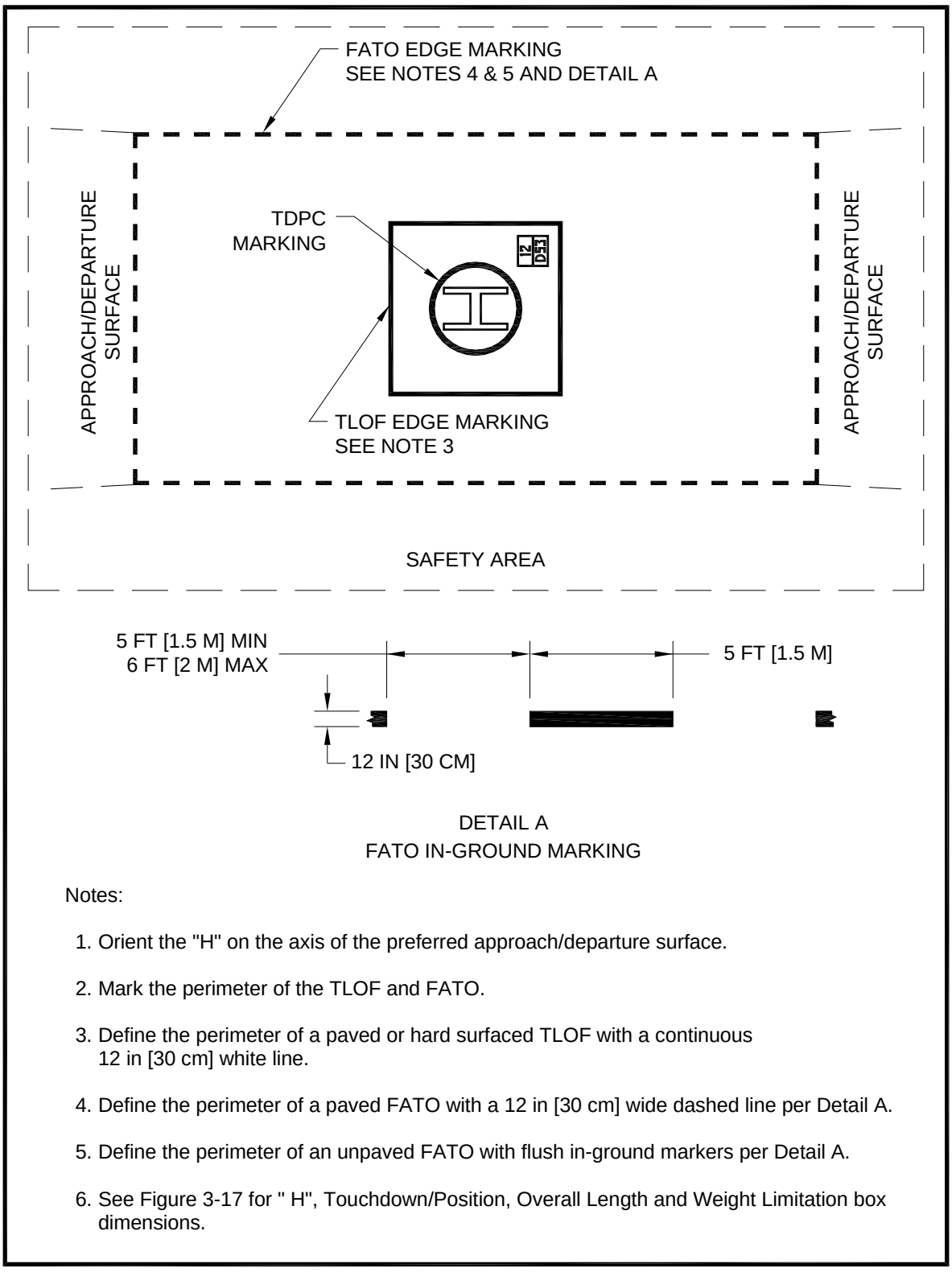
(2) Touchdown/positioning circle (TDPC) marking. A TDPC marking provides guidance to allow a pilot to touch down in a specific position on paved surfaces. When the pilot’s seat is over the marking, the undercarriage will be inside the LBA, and all parts of the helicopter will be clear of any obstacle by a safe margin. A TDPC marking is a yellow circle with an inner diameter of ½ D and a line width of 18 in (46 cm). Locate a TDPC marking in the center of a TLOF. See Figure 3–17.



Notes:

1. See Appendix C for the form and proportion of the numbers used in the TLOF Size and Limitation Box.
2. "12" indicates the maximum takeoff weight (12,000 lbs) of the TLOF design helicopter, in units of thousands of pounds.
3. "D53" indicates the overall length of the largest helicopter (53 ft) for which the TLOF is designed.

Figure 3–17. Standard Heliport Identification Symbol, TLOF Size and Weight Limitations: Transport



Notes:

1. Orient the "H" on the axis of the preferred approach/departure surface.
2. Mark the perimeter of the TLOF and FATO.
3. Define the perimeter of a paved or hard surfaced TLOF with a continuous 12 in [30 cm] white line.
4. Define the perimeter of a paved FATO with a 12 in [30 cm] wide dashed line per Detail A.
5. Define the perimeter of an unpaved FATO with flush in-ground markers per Detail A.
6. See Figure 3-17 for " H", Touchdown/Position, Overall Length and Weight Limitation box dimensions.

Figure 3–18. Paved TLOF/Paved FATO – Paved TLOF/Unpaved FATO – Marking: Transport

(3) TLOF size and weight limitations. Mark the TLOF to indicate the length and weight of the largest helicopter it will accommodate, as shown in Figure 3–17. Place these markings in a box in the lower right-hand corner of the TLOF, or the on right-hand side of the "H" of a circular TLOF, when viewed from the preferred approach direction. The box is 10 feet square (3 m). The numbers are 36" (92 cm) high (see Figure C–2). The numbers are black with a white background.

(4) TLOF size limitation. This number is the length (D) of the largest helicopter the TLOF will accommodate, as shown in Figure 3–17. The marking consists of the letter "D" followed by the dimension in feet. Do not use metric equivalents for this purpose. Center this marking in the lower section of the TLOF size/weight limitation box.

(5) TLOF weight limitations. If a TLOF has limited weight-carrying capability, mark it with the maximum takeoff weight of the design helicopter, in units of thousands of pounds, as shown in Figure 3–17. Do not use metric equivalents for this purpose. Center this marking in the upper section of a TLOF size/weight limitation box. If the TLOF does not have a weight limit, add a diagonal line, extending from the lower left hand corner to the upper right hand corner, to the upper section of the TLOF size/weight limitation box.

c. FATO markings.

(1) FATO perimeter marking.

(a) Paved FATOs. Define the perimeter of a paved FATO with a 12-inch (30 cm) wide dashed white line. Define the corners of the FATO. The marking segments are approximately 5 feet (1.5 m) in length, and with end-to-end spacing of approximately 5 feet (1.5 m). See Figure 3–18.

(b) Unpaved FATOs. Mark the perimeter of an unpaved FATO with 12-inch (30 cm) wide, flush in-ground markers. Define the corners of the FATO. They are approximately 5 feet (1.5 m) in length, and with end-to-end spacing of approximately 5 feet (1 5 m). See Figure 3–18.

d. Flight path alignment guidance marking. An optional flight path alignment guidance marking consists of one or more arrows to indicate the preferred approach/departure direction(s). Place it on the TLOF, FATO and/or safety area surface as shown in Figure 3–9. The shaft of the arrow is 18 inches (50 cm) in width and at least 10 feet (3 m) in length. When combined with a flight path alignment guidance lighting system described in paragraph 301.g, it takes the form shown in Figure 3–9, which includes scheme for marking the arrowheads. Use a color that provides good contrast against the background color of the surface. An arrow pointing toward the center of the TLOF depicts an approach direction. An arrow pointing away from the center of the TLOF depicts a departure direction. In the case of a flight path limited to a single departure path, the arrow marking is unidirectional. In the case of a heliport with only a bidirectional approach /takeoff flight path available, the arrow marking is bidirectional.

e. Taxiway and taxi route markings.

(1) Taxiway markings. Mark the centerline of a taxiway with a continuous 6-inch (15 cm) yellow line. Mark both edges of the taxiway with two continuous 6- inch (15 cm) wide yellow lines spaced 6 inches (15 cm) apart. Figure 3–11 illustrates taxiway centerline and edge markings.

(2) Taxiway to parking position transition requirements. For paved taxiways and parking areas, taxiway centerline markings continue into parking positions and become the parking position centerlines.

f. Helicopter parking position markings. Helicopter parking positions have the following markings.

(1) Paved parking position identifications. Mark parking position identifications (numbers or letters) if there is more than one parking position. These markings are yellow characters 36 inches (91 cm) high. See Figure 3–16 and Figure C–1.

(2) Rotor diameter circle. Define the circle of the RD of the largest helicopter that will park at that position with a 6-inch (15 cm) wide, solid yellow line with an outside diameter of RD. See Figure 3–12.

(3) Touchdown/positioning circle (TDPC) marking. An optional TDPC marking provides guidance to allow a pilot to touch down in a specific position on paved surfaces. When the pilot's seat is over the marking, the undercarriage will be inside the LBA, and all parts of the helicopter will be clear of any obstacle by a safe margin. A TDPC marking is a yellow circle with an inner diameter of ½ D and a line width of 18 in (46 cm). Locate a TDPC marking in the center of a parking area. See Figure 3–16. The FAA recommends a TDPC marking for "turn-around" parking areas.

(4) Maximum length marking. This marking on paved surfaces indicates the D of the largest helicopter that the position will accommodate (for example, 49). This marking is in yellow characters at least 36 inches (91 cm) high. See Figure 3–17 and Figure C–1.

(5) Parking position weight limit. If a paved parking position has a weight limitation, mark it in units of 1,000 lbs as illustrated in Figure 3–16. (A "12" indicates a weight-carrying capability of up to 9,000 lbs. Do not use metric equivalents for this purpose.) This marking consists of yellow characters 36 inches (91 cm) high. When necessary to minimize the possibility of being misread, place a bar under the number. See Figure 3–17 and Figure C–1.

(6) Shoulder line markings. Use optional shoulder line markings for paved parking areas (Figure 3–12) to ensure safe rotor clearance. Locate a 6-inch (15 cm) wide solid yellow shoulder line, perpendicular to the centerline and extending to the RD marking, so it is under the pilot's shoulder. This ensures the main rotor of the largest helicopter the position will accommodate will be entirely within the rotor diameter parking circle. See Figure 3–16. The FAA recommends a shoulder line marking for "taxi through" parking areas.

(7) Walkways. Figure 3–12 illustrates one marking scheme.

g. Closed heliport. Obliterate all markings of a permanently closed heliport, FATO, or TLOF. If it is impractical to obliterate markings, place a yellow "X" over the "H", as illustrated in Figure 3–19. Make the yellow "X" large enough to ensure early pilot recognition that the heliport is closed. Remove the wind cone(s) and other visual indications of an active heliport.

h. Marking sizes. See Appendix C for guidance on the proportions of painted numbers.

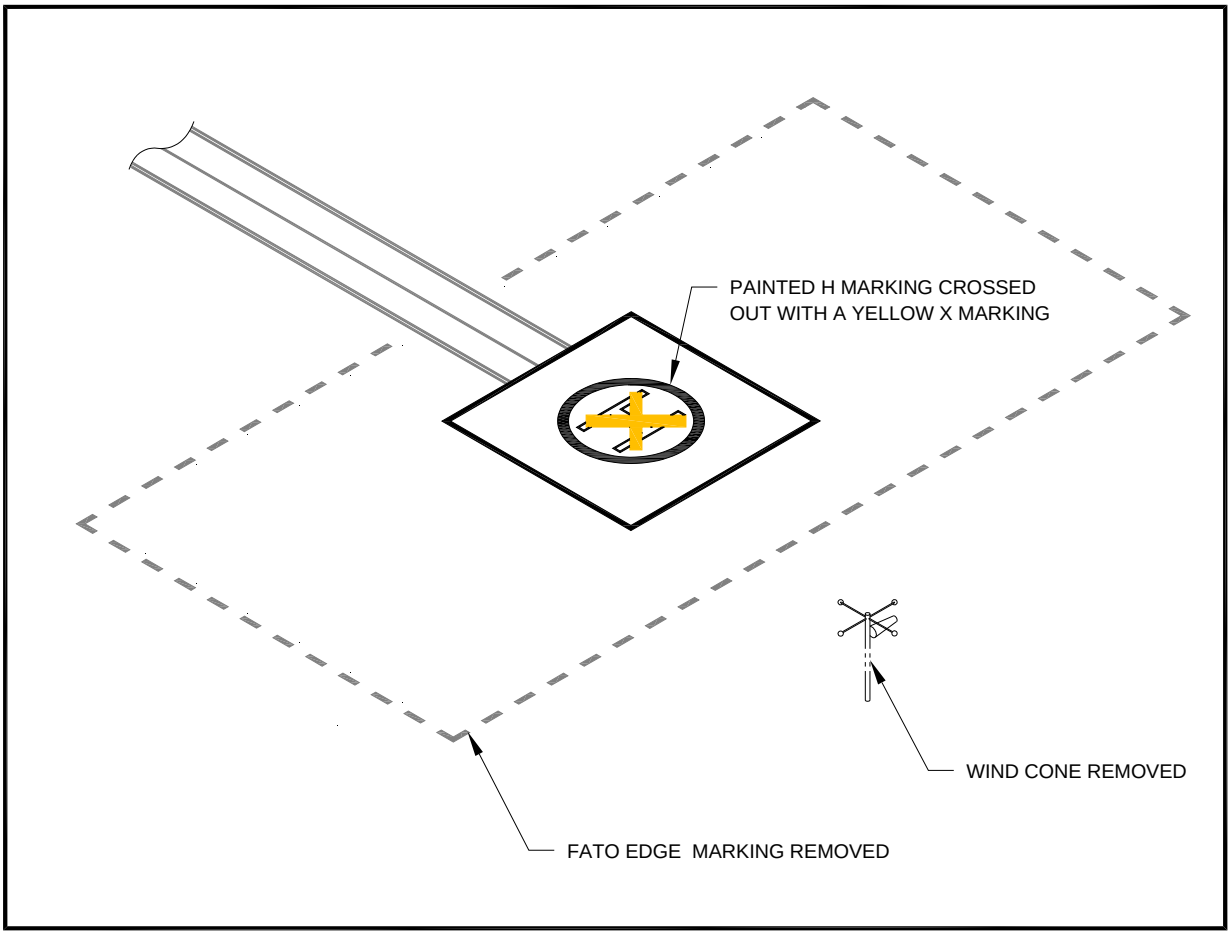


Figure 3–19. Marking a Closed Heliport: Transport

315. Heliport lighting. For night operations, light the heliport with FATO and/or TLOF perimeter lights as described below. Design flush light fixtures and installation methods to support point loads of the design helicopter transmitted through a skid or wheel.

a. TLOF – perimeter lights. Use flush green lights meeting the requirements of FAA Airports Engineering Brief 87, Heliport Perimeter Light for Visual Meteorological Conditions (VMC), to define the TLOF perimeter. Use a minimum of four light fixtures per side of the TLOF. Locate a light is located at each corner, with additional lights uniformly spaced between the corner lights. Using an odd number of lights on each side will place lights along the centerline of the approach. Install lights at a maximum spacing of 25 feet (7.6 m). Locate flush lights within 1 foot (30 cm) (inside or outside) of the TLOF perimeter. Figure 3–20 and Figure 3–21 illustrate this lighting.

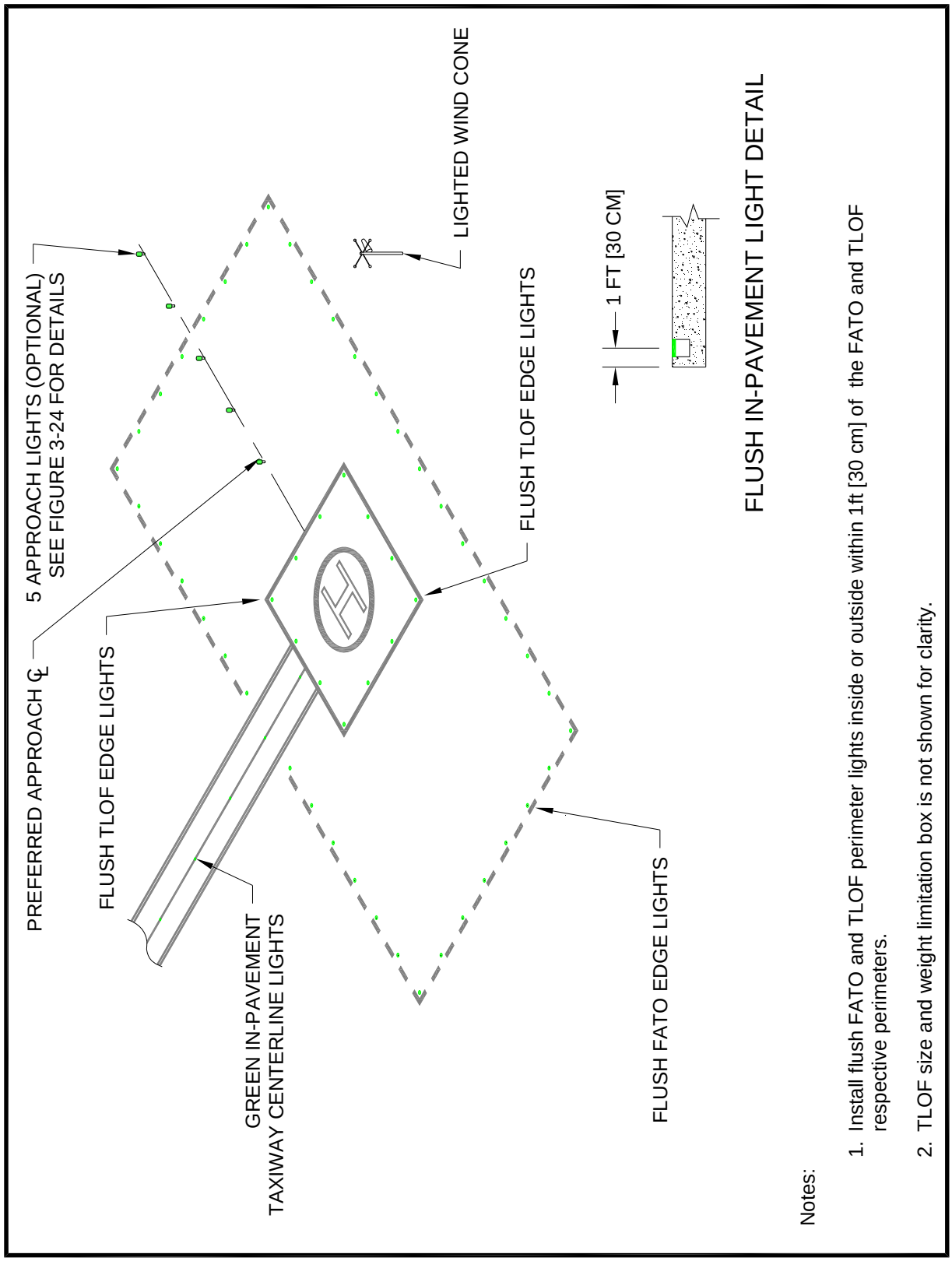


Figure 3–20. TLOF and FATO Flush Perimeter Lighting: Transport

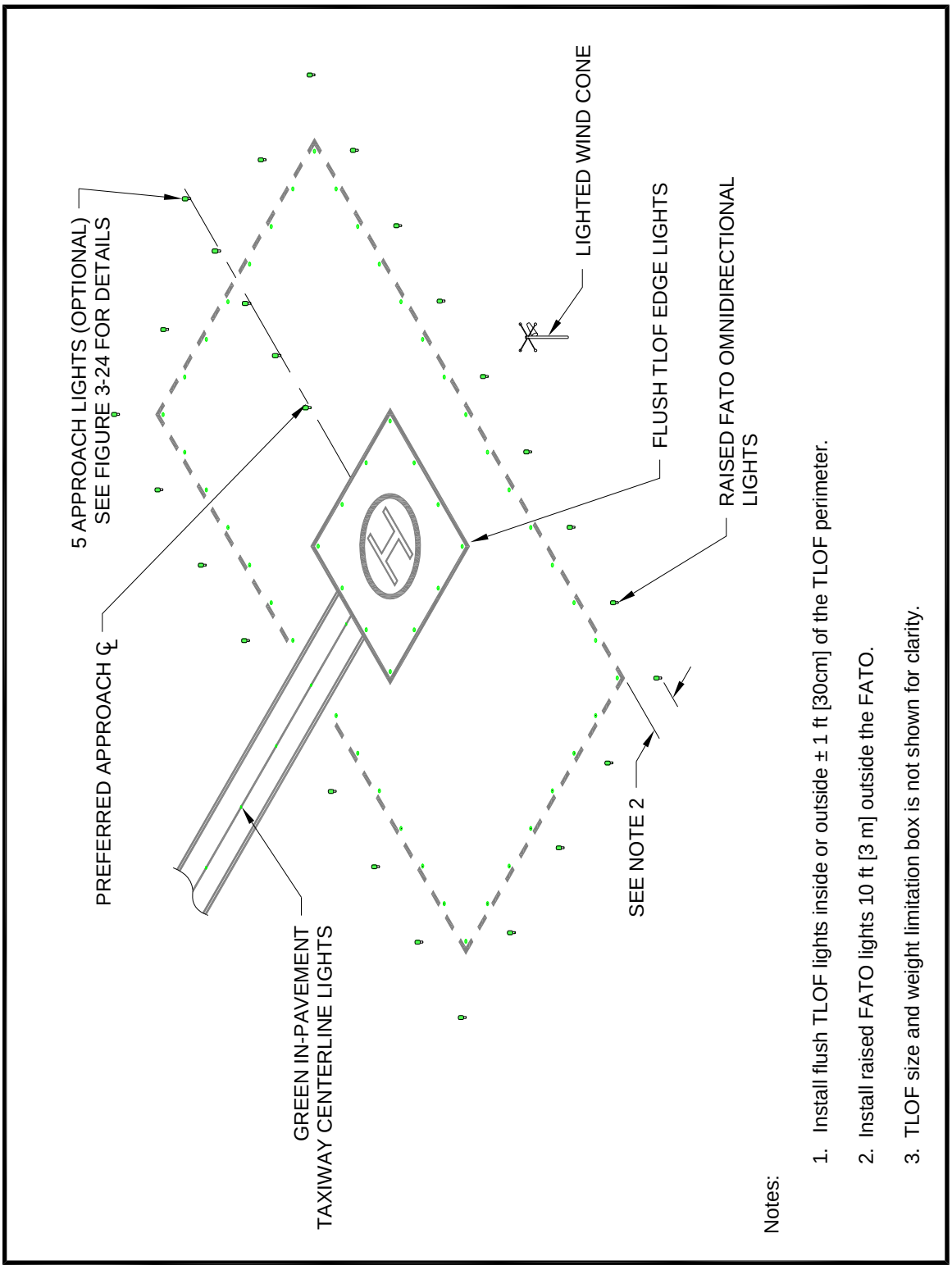


Figure 3–21. FATO Raised and TLOF Flush Perimeter Lighting: Transport

b. Optional TLOF lights. As an option, install a line of 7 green, flush lights meeting the standards of EB 87 spaced at 5-foot (1.5 m) intervals in the TLOF pavement. Align these lights on the centerline of the approach course to provide close-in directional guidance and improve TLOF surface definition. These lights are illustrated in Figure 3–22.

c. Ground level FATO perimeter lights. Use green lights meeting the requirements of EB 87 to define the limits of the FATO. Locate a light at each corner with additional lights uniformly spaced between the corner lights with a maximum interval of 25 feet (8 m) between lights. Using an odd number of lights on each side will place lights along the centerline of the approach. Locate flush lights within 1 foot (30 cm) inside or outside of the FATO perimeter. Mount raised light fixtures frangibly, no more than 8 inches (20 cm) high, and locate them 10 feet (3 m) out from the FATO perimeter. Make sure they do not penetrate a horizontal plane at the FATO elevation by more than 2 inches (5 cm). See Figure 3–21 and Figure 7–3.

d. Elevated FATO – perimeter lights. Lighting for an elevated FATO is the same as for a ground level FATO. As an option, locate lights at the outside edge of the safety net, as shown in Figure 3–23. Make sure the raised lights do not penetrate a horizontal plane at the FATO elevation by more than 2 inches (5 cm). See Figure 7–3.

e. Floodlights. Use floodlights to illuminate the parking apron. If possible, mount these floodlights on adjacent buildings to eliminate the need for tall poles. Take care, however, to place floodlights clear of the TLOF, the FATO, the safety area, and the approach/departure surfaces and transitional surfaces and ensure the floodlights and their associated hardware do not constitute an obstruction hazard. Aim floodlights down to provide illumination on the apron surface. Make sure floodlights that might interfere with pilot vision during takeoff and landings are capable of being turned off by pilot control or at pilot request.

f. Landing direction lights. As an option when it is necessary to provide directional guidance, install landing direction lights. Landing direction lights are a configuration of five green omnidirectional lights meeting the standards of EB 87 on the centerline of the preferred approach/departure path. Space these lights at 15-foot (4.6 m) intervals beginning at a point not less than 30 feet (9 m) and not more than 60 feet (18 m) from the TLOF perimeter and extending outward in the direction of the preferred approach/departure path, as illustrated in Figure 3–24.

g. Flight path alignment lights. As an option, install flight path alignment lights meeting the requirements of EB 87. Place them in a straight line along the direction of approach and/or departure flight paths, extending as necessary across the TLOF, FATO, safety area or any suitable surface in the immediate vicinity of the FATO or safety area. Install three or more green lights spaced at 5 feet (1.5 m) to 10 feet (3.0 m). See Figure 3–9.

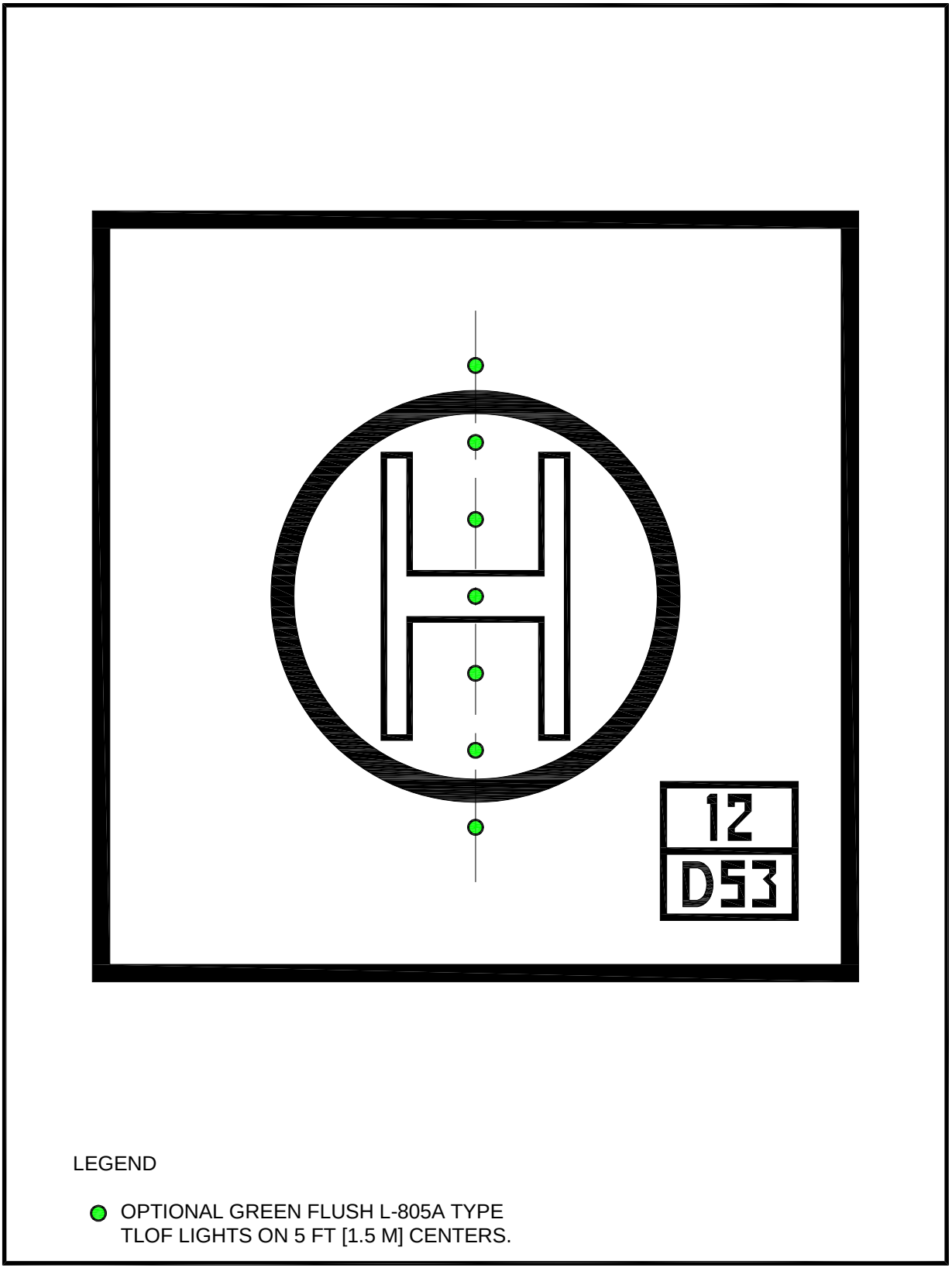


Figure 3–22. Optional TLOF Lights: Transport

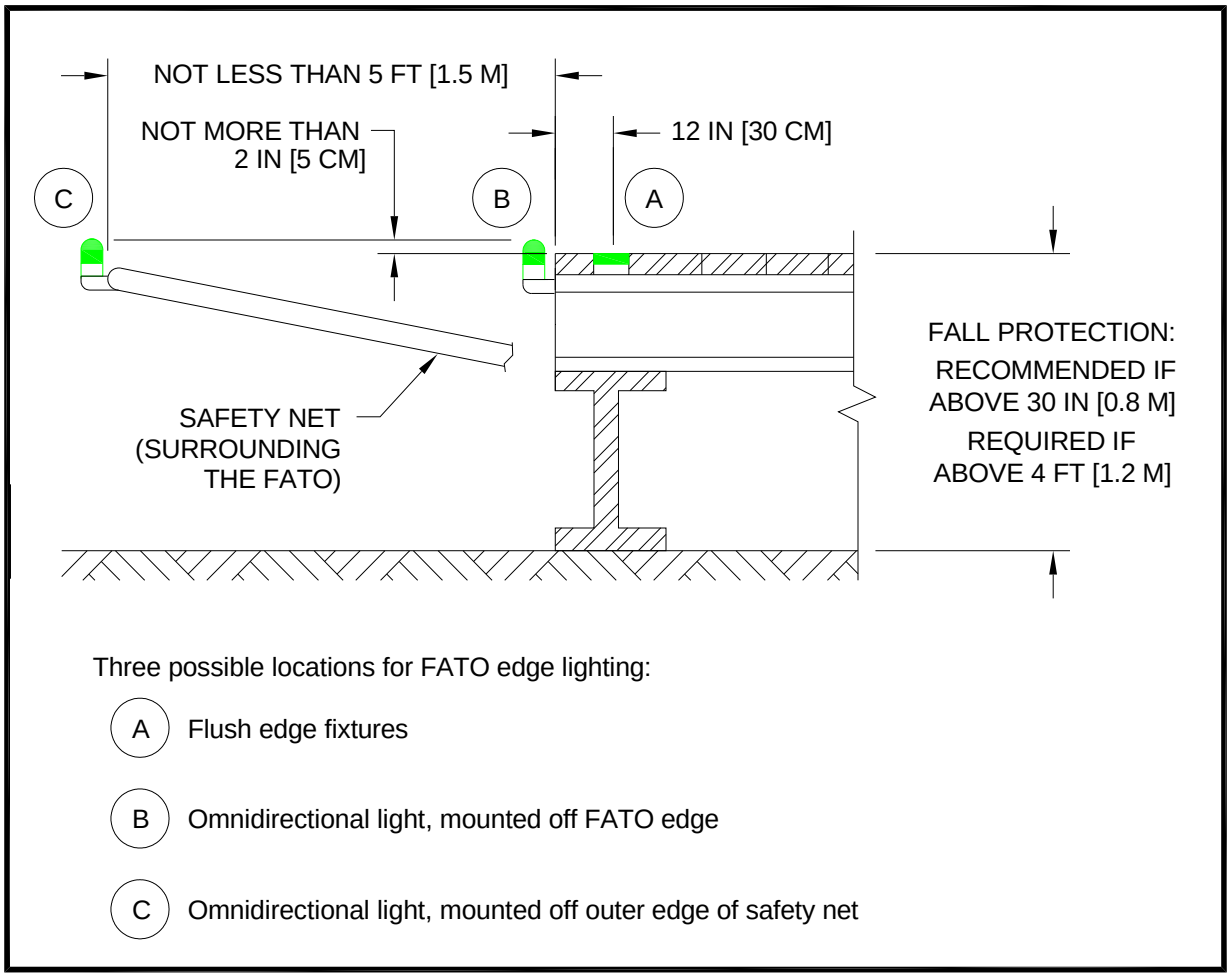


Figure 3–23. Elevated FATO – Perimeter Lighting: Transport

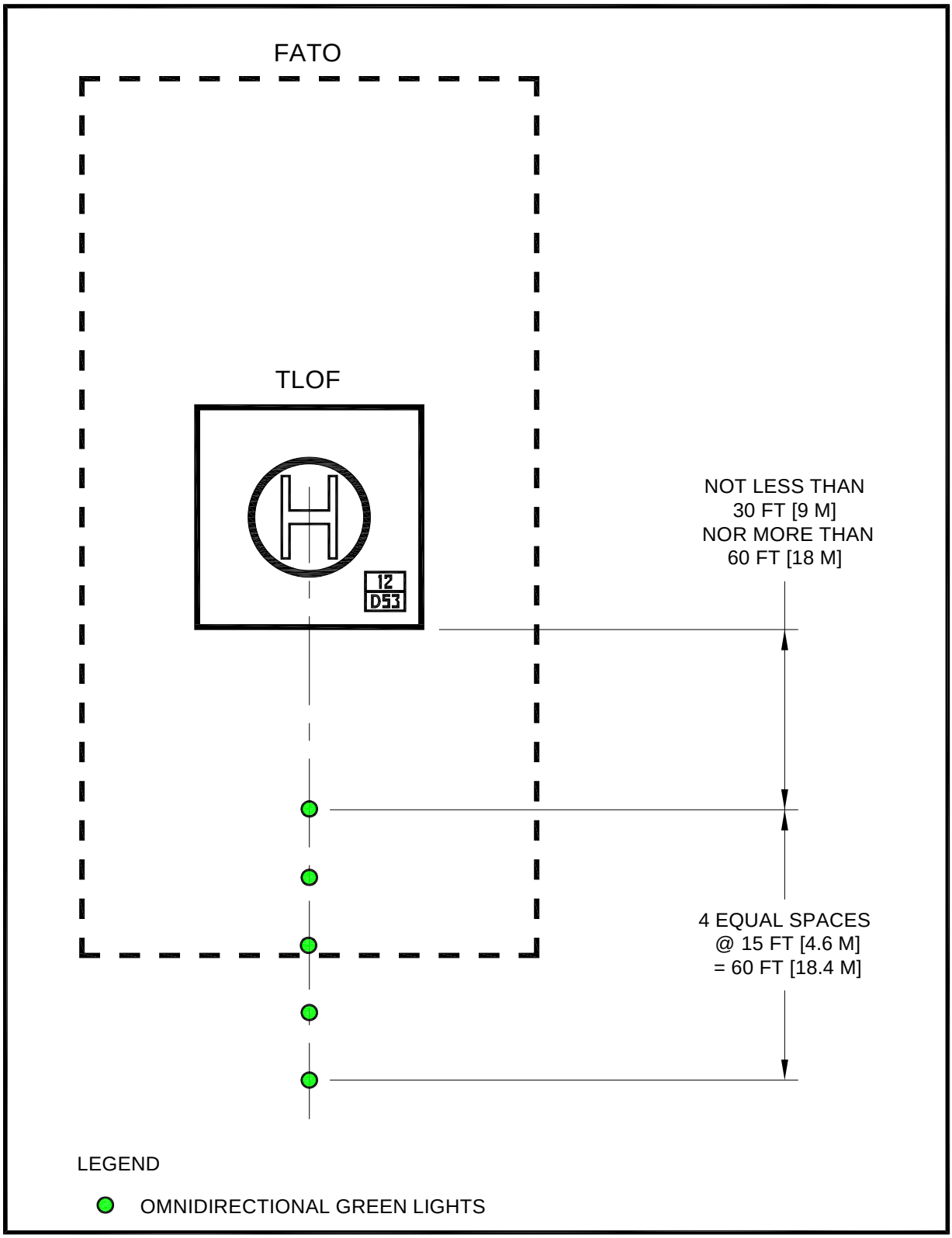


Figure 3–24. Landing Direction Lights: Transport

h. Taxiway and taxi route lighting.

(1) Taxiway centerline lights. Define taxiway centerlines with flush bidirectional green lights meeting the standards of AC 150/5345-46, Specification for Runway and Taxiway Light Fixtures, for type L-852A (straight segments) or L-852B (curved segments). Space these lights at maximum 50-foot (15 m) longitudinal intervals on straight segments and at maximum 25-foot (7.6 m) intervals on curved segments, with a minimum of four lights needed to define the curve. As an option, uniformly offset taxiway centerline lights no more than two feet (0.6 m) to ease painting the taxiway centerline. Do not use retroreflective markers.

(2) Taxiway edge lights. Use flush omnidirectional blue lights meeting the standards of AC 150/5345-46 for type L-852T to mark the edges of a taxiway. Do not use retroreflective markers.

(a) Straight segments. Space lights at 50-foot (15.2 m) longitudinal intervals on straight segments.

(b) Curved segments. Curved taxiway edges require shorter spacing of edge lights. Base the spacing on the radius of the curve. AC 150/5340-30, Design and Installation Detail for Airport Visual Aids shows the applicable spacing for curves. Space taxiway edge lights uniformly. On curved edges of more than 30 degrees from point of tangency (PT) of the taxiway section to PT of the intersecting surface, install have at least three edge lights. For radii not listed in AC 150/5340-30, determine spacing by linear interpolation.

i. Heliport identification beacon. Install a heliport identification beacon. Locate the beacon, flashing white/green/yellow at the rate of 30 to 45 flashes per minute, on or close to the heliport. Find guidance on heliport beacons in AC 150/5345-12, Specification for Airport and Heliport Beacon.

316. Marking and lighting of difficult-to-see objects. It is difficult for a pilot to see unmarked wires, antennas, poles, cell towers, and similar objects, even in the best daylight weather, in time to take evasive action. While pilots can avoid such objects during en route operations by flying well above them, approaches and departures require operations near the ground where obstacles may be a factor. This paragraph discusses the marking and lighting of objects near, but outside and below the approach/departure surface. Find guidance on marking and lighting objects in AC 70/7460-1, Obstruction Marking and Lighting.

a. Airspace. If difficult-to-see objects penetrate the object identification surfaces illustrated in Figure 3–25 and Figure 3–26, mark these objects to make them more conspicuous. If a heliport supports operations between dusk and dawn, light these difficult-to-see objects. The object identification surfaces in Figure 3–25 and Figure 3–26 are described as follows:

(1) In all directions from the safety area except under the approach/departure paths, the object identification surface starts at the safety area perimeter and extends out horizontally for a distance of 100 feet (30.5 m).

(2) Under the approach/departure surface, the object identification surface starts from the outside edge of the FATO and extends horizontally out along the approach path for a distance of 800 feet (244 m). From this point, the object identification surface extends out for an additional distance of 3,200 feet (975 m) along the approach path while rising on an 8:1 slope (8 units horizontal in 1 unit vertical). From the point 800 feet (244 m) from the FATO perimeter, the object identification surface is 100 feet (30.5 m) beneath the approach/departure surface.

(3) The width of this object identification surface under the approach/departure surface increases as a function of distance from the safety area. From the safety area perimeter, the object identification surface extends laterally to a point 100 feet (30.5 m) outside the safety area perimeter. At the upper end of the surface, the object identification surface extends laterally 200 feet (61 m) on either side of the approach/departure path.

b. Shielding of objects. Title 14 CFR Part 77.9, Construction or alteration requiring notice, provides that if there are a number of objects close together, it may not be necessary to mark all of them if they are shielded. To meet the shielding guidelines part 77 requires that an object "be shielded by existing structures of a permanent and substantial nature or by natural terrain or topographic features of equal or greater height, and will be located in the congested area of a city, town, or settlement where the shielded structure will not adversely affect safety in air navigation."

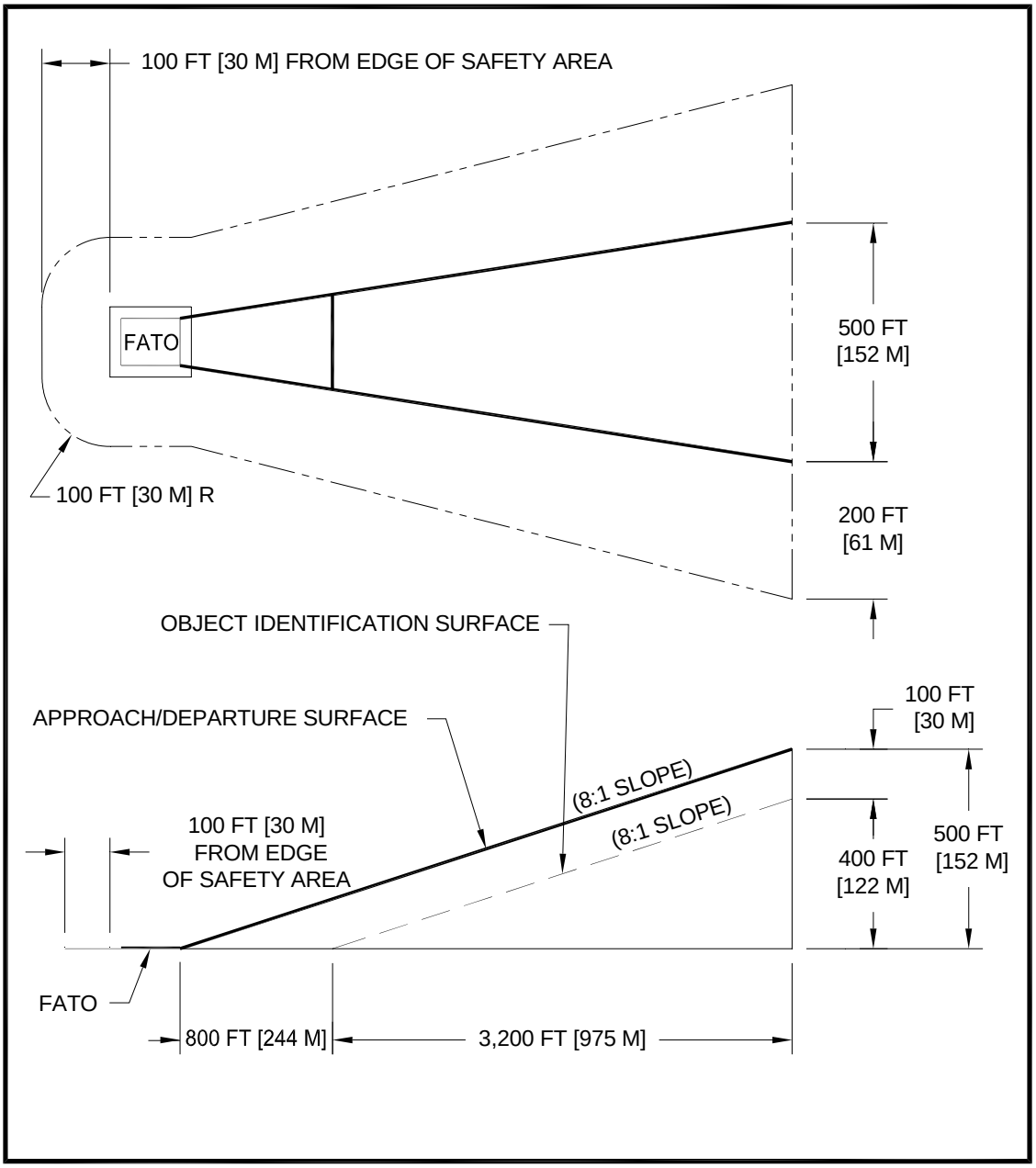


Figure 3–25. Airspace Where Marking and Lighting are Recommended: Straight Approach: Transport

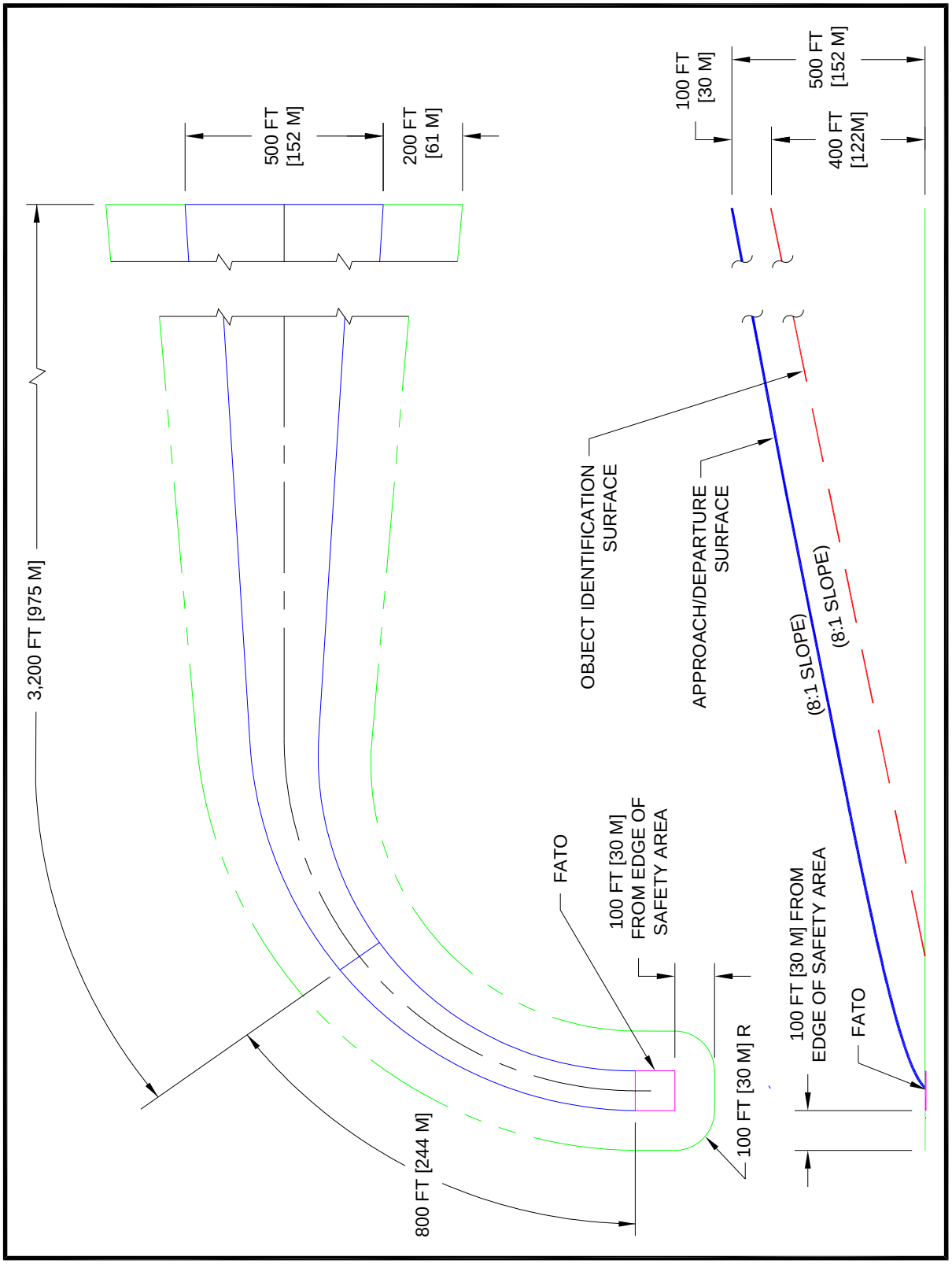


Figure 3–26. Airspace Where Marking and Lighting are Recommended: Curved Approach: Transport

c. Equipment/object marking. Make heliport maintenance and servicing equipment, as well as other objects used in the airside operational areas, conspicuous with paint, reflective paint, reflective tape, or other reflective markings. Reference AC 150/5210-5, Painting, Marking, and Lighting of Vehicles Used on an Airport.

317. Safety considerations. Consider the safety enhancements discussed below in the design of a heliport. Address other areas, such as the effects of rotor downwash, based on site conditions and the design helicopter.

a. Security. Provide a means to keep the operational areas of a heliport clear of people, animals, and vehicles. Use a method to control access depending upon the helicopter location and types of potential intruders.

(1) Safety barrier. At ground-level transport heliports, erect a safety barrier around the helicopter operational areas in the form of a fence or a wall. Construct the barrier no closer to the operation areas than the outer perimeter of the safety area. Make sure the barrier does not penetrate any approach/departure (primary or transitional) surface. If necessary in the vicinity of the approach/departure paths, install the barrier well outside the outer perimeter of the safety area.

(2) Make sure any barrier is high enough to present a positive barrier to persons inadvertently entering an operational area and yet low enough to be non-hazardous to helicopter operations.

(3) Control access to airside areas with locked gates and doors. Display a cautionary sign similar to that illustrated in Figure 3–27 on gates and doors.

b. Rescue and fire-fighting services. Heliports are subject to state and local rescue and fire-fighting regulations. Provide a fire hose cabinet or extinguisher at each access gate and each fueling location. At elevated TLOF/FATOs, locate fire hose cabinets, fire extinguishers, and other fire-fighting equipment adjacent to, but below the level, of the TLOF/FATO. Find additional information in various NFPA publications. For more reference material, see Appendix D.

c. Communications. Use a Common Traffic Advisory Frequency (CTAF) radio to provide arriving helicopters with heliport and traffic advisory information but do not use this radio to control air traffic. Contact the Federal Communications Commission (FCC) for information on CTAF licensing.

d. Weather information. An automated weather observing system (AWOS) measures and automatically broadcasts current weather conditions at the heliport site. When installing an AWOS, locate it at least 100 feet (30 m) and not more than 700 feet (213 m) from the TLOF and such that its instruments will not be affected by rotor wash from helicopter operations. Find guidance on AWOS systems in AC 150/5220-16, Automated Weather Observing Systems (AWOS) for Non-Federal Applications, and FAA Order 6560.20, Siting Criteria for Automated Weather Observing Systems (AWOS). Other weather observing systems will have different siting criteria.

e. Winter operations. Swirling snow raised by a helicopter's rotor wash can cause the pilot to lose sight of the intended landing point and/or hide objects that need to be avoided.. Design the heliport to accommodate the methods and equipment to be used for snow removal. Design the heliport to allow the snow to be removed sufficiently so it will not present an obstruction hazard to either the tail rotor or the main rotor. Find guidance on winter operations in AC 150/5200-30, Airport Winter Safety and Operations.

Figure 3–27. Caution Sign: Transport

318. Visual glideslope indicators (VGSI). A visual glideslope indicator (VGSI) provides pilots with visual vertical course and descent cues. Install the VGSI such that the lowest on-course visual signal provides a minimum of 1 degree of clearance over any object that lies within 10 degrees of the approach course centerline.

a. Siting. The optimum location of a VGSI is on the extended centerline of the approach path at a distance that brings the helicopter to a hover with the undercarriage between 3 and 8 feet (0.9 to 2.4 m) above the TLOF. Figure 3–28 illustrates VGSI clearance criteria. To properly locate the VGSI, estimate the vertical distance from the undercarriage to the pilot's eye.

b. Control of the VGSI. As an option, allow the VGSI to be pilot controllable such that it is "on" only when needed.

c. VGSI needed. A VGSI is an optional feature. However, provide a VGSI if one or more of the following conditions exist, especially at night:

(1) Obstacle clearance, noise abatement, or traffic control procedures require a particular slope to be flown.

(2) The environment of the heliport provides few visual surface cues.

d. Additional guidance. AC 150/5345-52, Generic Visual Glideslope Indicators (GVGI), and AC 150/5345-28, Precision Approach Path Indicator (PAPI) Systems, provide additional guidance.

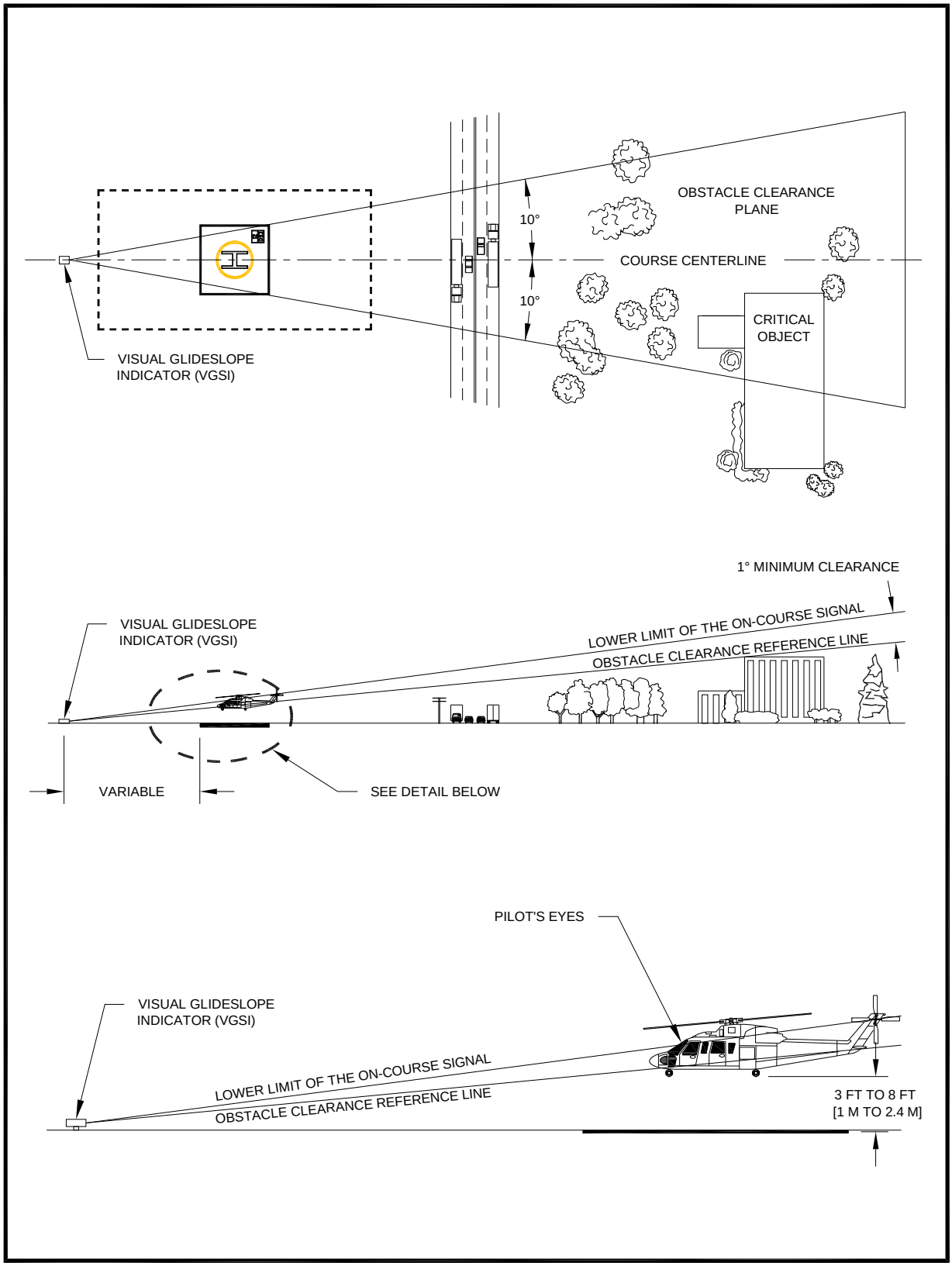


Figure 3–28. Visual Glideslope Indicator Siting and Clearance Criteria: Transport

319. Terminal facilities.

a. Design considerations. A heliport terminal provides curbside access for passengers using private autos, taxicabs, and public transit vehicles. Public waiting areas need the usual amenities, and a counter for rental car services may be desirable. Design passenger auto parking areas to accommodate current requirements, with the ability to expand them to meet future requirements. Readily available public transportation may reduce the requirement for employee and service personnel auto parking spaces. Build attractive and functional heliport terminal buildings or sheltered waiting areas. Find guidance on designing terminal facilities in AC 150/5360-9, Planning and Design of Airport Terminal Building Facilities at Non-Hub Locations.

b. Security. Unless screening was carried out at the helicopter passengers' departure location, Transportation Security Administration regulations may require that a screening area and/or screening be provided before passengers enter the airport's secured areas. If needed, provide multiple helicopter parking positions and/or locations in the terminal area to service helicopter passenger and/or cargo interconnecting needs. Find information about passenger screening at the Transportation Security Administration web site (http://www.tsa.gov/public/).

320. Zoning and compatible land use. Where state and local statutes permit, the FAA encourages transport heliport operators to promote the adoption of the following zoning measures to ensure the heliport will continue to be available for public use and to protect the community's investment in the facility.

a. Zoning to limit building/object heights. Find general guidance on drafting an ordinance that would limit building and object heights in AC 150/5190-4, A Model Zoning Ordinance to Limit Height of Objects Around Airports. Substitute the heliport surfaces for the airport surfaces described in the model ordinance.

b. Zoning for compatible land use. The FAA encourages public agencies to enact zoning ordinances to control the use of property within the HPZ and the approach/departure path environment, restricting activities to those that are compatible with helicopter operations. See paragraph 310.

c. Air rights and property easements. Use air rights and property easements as options to prevent the encroachment of obstacles in the vicinity of a heliport.

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Chapter 4. Hospital Heliports

401. General. Helicopters are often used to transport injured persons from the scene of an accident to a hospital and to transfer patients from one hospital to another. A hospital heliport accommodates helicopters used by Emergency Medical Services. In some emergencies, a hospital heliport may accommodate large military helicopters.

402. Applicability. The standards in this chapter apply to projects funded under the Airport Improvement Program (AIP) or Passenger Facility Charge (PFC) program. For other projects/heliports, these standards are the FAA's recommendations for designing all hospital heliports. This chapter highlights issues that are unique to hospital heliports and issues for which the design standards are different than those recommended for other general aviation heliports, but also includes standards that are common to other general aviation heliports. These standards address the design of a heliport that will accommodate air ambulance helicopter operations and emergency medical service (EMS) personnel and equipment. These standards are based on the understanding that pilots landing at the heliport are familiar with the facility. However, the heliport operator assumes the responsibility of ensuring the necessary information is readily available to pilots. Alternately, the heliport operator may choose to build the heliport to full general aviation standards. The design standards in this chapter assume there will never be more than one helicopter within the final approach and takeoff area (FATO) and the associated safety area. If there is a need for more than one touchdown and lift-off area (TLOF) at a heliport, locate each TLOF within its own FATO. Consider the feasibility of accommodating large military helicopters that might be used in an emergency.

403. Access by individuals with disabilities. Various laws require heliports operated by public entities and those receiving federal financial assistance to meet accessibility requirements. See paragraph 114.

404. Heliport site selection.

a. Planning. Public agencies and others planning to develop a hospital heliport are encouraged to select a site capable of supporting instrument operations, future expansion, and military helicopters that will be used in disaster relief efforts.

b. Property requirements. A functional hospital heliport may be as simple as a cleared area on the ground, together with a wind cone and a clear approach/departure path. Figure 4–1 illustrates the essential elements of a ground-level hospital heliport.

c. Turbulence. Air flowing around and over buildings, stands of trees, terrain irregularities, etc. can create turbulence on ground-level and roof-top heliports that may affect helicopter operations. Where the FATO is located near the edge and top of a building or structure, or within the influence of turbulent wakes from other buildings or structures, assess the turbulence and airflow characteristics in the vicinity of, and across the surface of the FATO to determine if an air-gap between the roof, roof parapet or supporting structure, and/or some other turbulence mitigating design measure is necessary. FAA Technical Report FAA/RD-84/25, Evaluating Wind Flow Around Buildings on Heliport Placement, addresses the wind's effect on helicopter operations. Take the following actions in selecting a site to minimize the effects of turbulence.

(1) Ground-level heliports. Features such buildings, trees, and other large objects can cause air turbulence and affect helicopter operations from sites immediately adjacent to them. Therefore, locate the landing and takeoff area away from such objects in order to minimize air turbulence in the vicinity of the FATO and the approach/departure paths.

(2) Elevated heliports. Establishing a 6 foot (1.8 m) or more air gap on all sides above the level of the roof will generally minimize the turbulent effect of air flowing over the roof edge. If an air gap is included in the design, keep it free at all times of objects that would obstruct the airflow. If it is not practical to include an air gap or some other turbulence mitigating design measure where there is turbulence, operational limitations may need to be considered under certain wind conditions. See paragraph 101.

d. Electromagnetic effects. Nearby electromagnetic devices, such as a magnetic resonance imaging machine (MRI), large ventilator motor, elevator motor, or other large electrical consumer may cause temporary aberrations in the helicopter magnetic compass and interfere with other onboard navigational equipment. Be alert to the location of any MRI with respect to the heliport location. A warning sign alerting pilots to the presence of an MRI is recommended. Take steps to inform pilots of the locations of MRIs and other similar equipment. For additional information, see FAA Technical Report FAA/RD-92/15, Potential Hazards of Magnetic Resonance Imagers to Emergency Medical Service Helicopter Services.

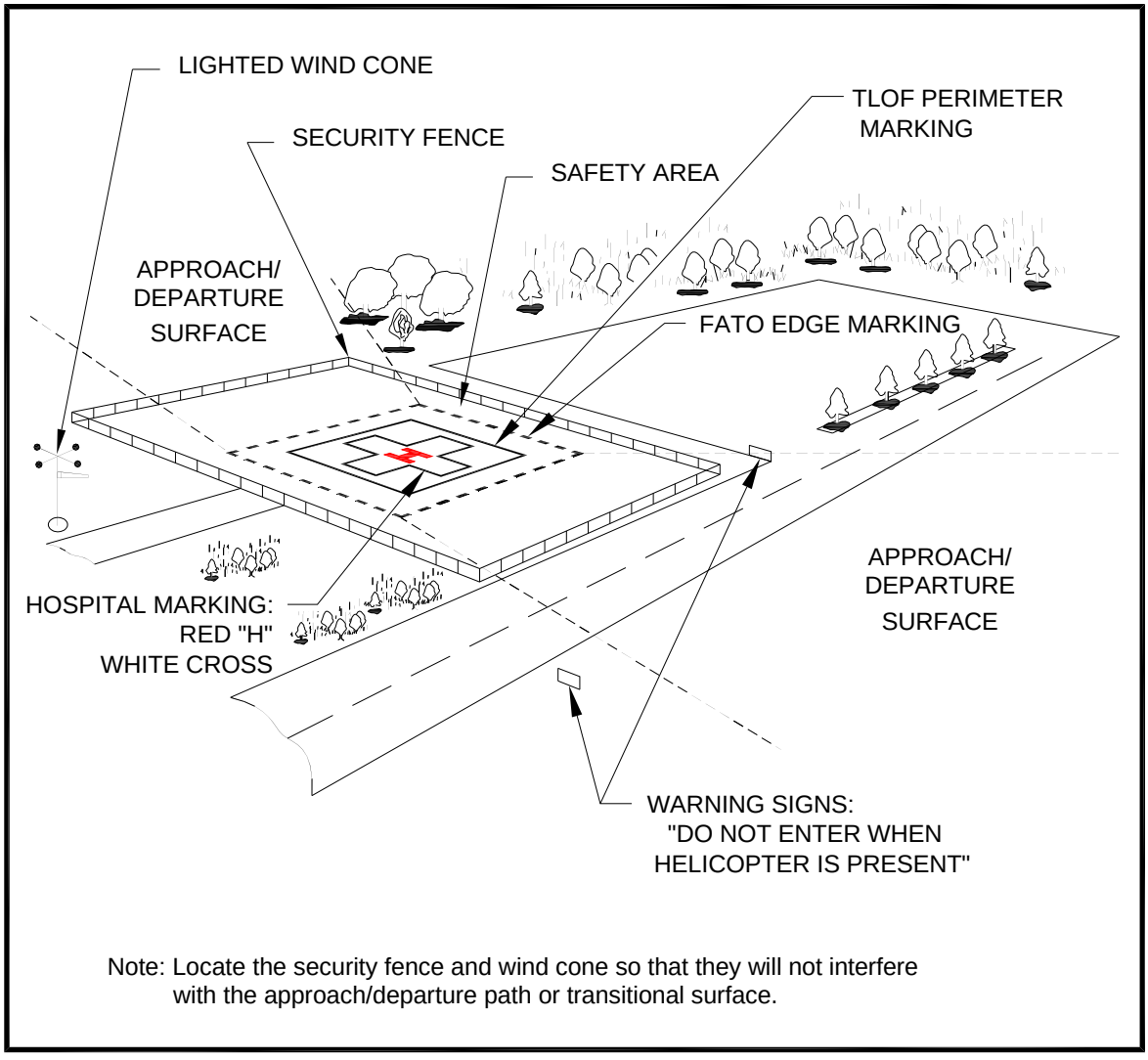
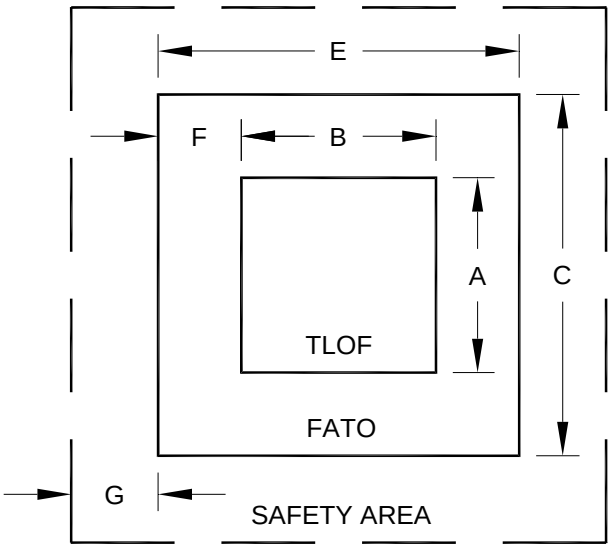


Figure 4–1. Essential Features of a Ground-level Hospital Heliport: Hospital



DIM	ITEM	VALUE	NOTES
A	Minimum TLOF Length	1 RD but not less than 40 ft [12 m]	
B	Minimum TLOF Width	1 RD but not less than 40 ft [12 m]	
C	Minimum FATO Length	1 ½ D	See Paragraph 406.b.(1) for adjustments of elevations above 1,000 ft
E	Minimum FATO Width	1 ½ D	
F	Minimum Separation Between the Perimeters of the TLOF and FATO	¾ D - ½ RD	
G	Minimum Safety Area Width	see Table 4-1	

Note: For a circular TLOF and FATO, dimensions A, B, C and E refer to diameters.

Figure 4–2. TLOF/FATO Safety Area Relationships and Minimum Dimension: Hospital

405. Basic layout. The heliport consists of a TLOF contained within a FATO. A safety area surrounds the FATO. The relationship of the TLOF to the FATO and the safety area is shown in Figure 4–2. A FATO contains only one TLOF. Provide appropriate approach/departure airspace to allow safe approaches to and departures from landing sites. To the extent feasible, align the preferred approach/departure path with the predominant winds. See paragraph 409.

406. Touchdown and liftoff area (TLOF).

a. TLOF location. TLOFs of hospital heliports are at ground level, on an elevated structure, or at rooftop level. Center the TLOF within the FATO.

b. TLOF size. The minimum TLOF dimension (length, width, or diameter) is equal to the rotor diameter (RD) of the design helicopter but not less than 40 feet (12 m). Design the TLOF to be rectangular or circular. Each design shape has its advantages. A square or rectangular shape provides the pilot with better alignment cues than a circular shape, but a circular TLOF may be more recognizable in an urban environment. Increasing the load-bearing area (LBA) centered on the TLOF may provide some safety and operational advantages. Increasing the TLOF dimensions may enhance safety factors and/or operational efficiency.

(1) Elevated hospital heliport. If the FATO outside the TLOF is non-load-bearing, increase the minimum width, length or diameter of the TLOF to the overall length (D) of the design helicopter.

(2) Elongated TLOF. An elongated TLOF can provide an increased safety margin and greater operational flexibility. As an option, design an elongated TLOF with a landing position in the center and two takeoff positions, one at either end, as illustrated in Figure 4–3. Design the landing position to have a minimum length of the RD of the design helicopter. If the TLOF is elongated, also provided an elongated FATO.

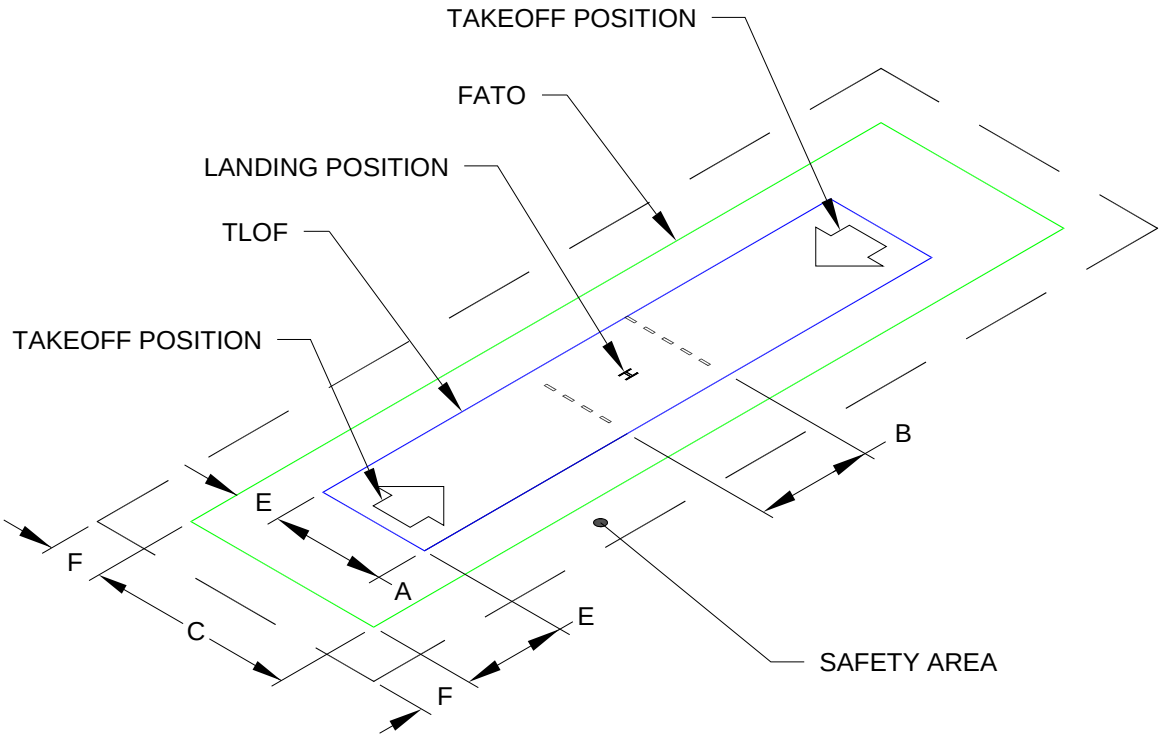
c. Ground-level TLOF surface characteristics.

(1) Design loads. Design the TLOF and any supporting TLOF structure to be capable of supporting the dynamic loads of the design helicopter.

(2) Paving. The standard for the TLOF surface is either paved or aggregate-turf (see AC 150/5370-10, Standards for Specifying Construction of Airports items P-217 and P-501). Use portland cement concrete (PCC) when feasible for ground-level facilities. An asphalt surface is less desirable for heliports as it may rut under the wheels or skids of a parked helicopter. This has been a factor in some rollover accidents. Use a broomed or roughened pavement finish to provide a skid-resistant surface for helicopters and non-slippery footing for people.

d. Rooftop and other elevated TLOFs.

(1) Design loads. Design elevated TLOFs and any TLOF supporting structure to be capable of supporting the dynamic loads of the design helicopter.



DIM	ITEM	VALUE	NOTES
A	Minimum TLOF Width	1 RD	but not less then 40 ft [12 m]
B	Minimum TLOF/Landing Position Length	1 RD	but not less then 40 ft [12 m]
C	Minimum FATO Width	1 ½ D	
E	Minimum Separation Between the Perimeters of the TLOF and FATO	¾ D - ½ RD	
F	Minimum Safety Area Width	see Table 4-1	

Note: For a circular TLOF and FATO, dimensions A, B, C and E refer to diameters.

Figure 4–3. Elongated FATO with Two Takeoff Positions: Hospital

(2) Elevation. Elevate the TLOF above the level of any obstacle in the FATO and safety area that cannot be removed. Exception: Edge restraints of minimal height (no higher than 4 inches) on ramps may project above the elevation of the edge of the TLOF.

(3) Obstructions. Elevator penthouses, cooling towers, exhaust vents, fresh-air vents, and other raised features can affect heliport operations. Establish control mechanisms to ensure obstruction hazards are not installed after the heliport is operational.

(4) Air Quality. Helicopter exhaust can affect building air quality if the heliport is too close to fresh air vents. When designing a building intended to support a helipad, locate fresh air vents accordingly. When adding a helipad to an existing building, relocate fresh air vents if necessary or, if

relocation is not practical, installing charcoal filters or a fresh air intake bypass louver system for HVAC systems may be adequate.

(5) TLOF surface characteristics. Construct rooftop and other elevated heliport TLOFs of metal, concrete, or other materials subject to local building codes. Use a finish for TLOF surfaces that provides a skid-resistant surface for helicopters and non-slippery footing for people.

(6) Safety net. If the platform is elevated 4 feet (1.2 m) or more above its surroundings, Title 29 CFR Part 1910.23, Guarding Floor and Wall Openings and Holes, requires the provision of fall protection. The FAA recommends such protection for all platforms elevated 30 inches (76 cm) or more. However, do not use permanent railings or fences since they would be safety hazards during helicopter operations. As an option, install a safety net, meeting state and local regulations but not less than 5 feet (1.5 m) wide. Design the safety net to have a load carrying capability of 25 lbs/sq ft (122 kg/sq m). Make sure the net, as illustrated in Figure 4–29, does not project above the level of the TLOF. Fasten both the inside and outside edges of the safety net to a solid structure. Construct nets of materials that are resistant to environmental effects.

(7) Access to elevated TLOFs. Title 29 CFR Part 1926.34, Means of Egress requires two separate access points for an elevated structure such as an elevated TLOF. Provide access to and from the TLOF via a ramp in order to provide for quick and easy transportation of a patient on a gurney. Build ramps in accordance with state and local requirements. Design the width of the ramp, and any turns in the ramp, to be wide enough to accommodate a gurney with a person walking on each side. Design straight segments of the ramp to be at least 6 feet (1.8 m) wide. Additional width may be required in the turns. Provide the ramp with a slip-resistant surface, with a slope no steeper than 12:1 (12 units horizontal in 1 unit vertical). While it is possible to move a gurney to and from the TLOF using a lift, avoid this, since it invariably results in a delay in the movement of patients in time-critical conditions. Design stairs in compliance with Title 29 CFR Part 1910.24, Fixed Industrial Stairs. Design handrails required by this standard to fold down or be removable to below the level of the TLOF so they will not be hazards during helicopter operations.

e. TLOF gradients. Recommended TLOF gradients are defined in Chapter 7.

407. Final approach and takeoff area (FATO). A hospital heliport has at least one FATO. The FATO contains a TLOF within its borders at which arriving helicopters terminate their approach and from which departing helicopters take off.

a. FATO location. FATOs of hospital heliports are at ground level, on an elevated structure, or on a rooftop. To avoid or minimize the need for additional ground transport, locate the FATO to provide ready access to the hospital's emergency room, but such that buildings and other objects are outside the safety area and below obstacle clearance surfaces. The relationship of the FATO to the TLOF and the safety area is shown in Figure 4–2.

b. FATO size.

(1) Design the FATO so its minimum width, length, or diameter is 1½ times the overall length (D) of the design helicopter. Design the FATO to be circular or rectangular, regardless of the shape of the TLOF. At elevations above 1,000 feet MSL, include a longer FATO to provide an increased safety margin and greater operational flexibility. Use the additional FATO length as depicted in Figure 4–4.

(2) Design the minimum distance between the TLOF perimeter and the FATO perimeter to be not less than ¾ D – ½ RD, where D is the overall length and RD is the rotor diameter of the design helicopter. Note that if the TLOF and FATO are not of similar shape, this applies at all points of the TLOF perimeter. The relationship of the TLOF to the FATO and the safety area is shown in Figure 4–2.

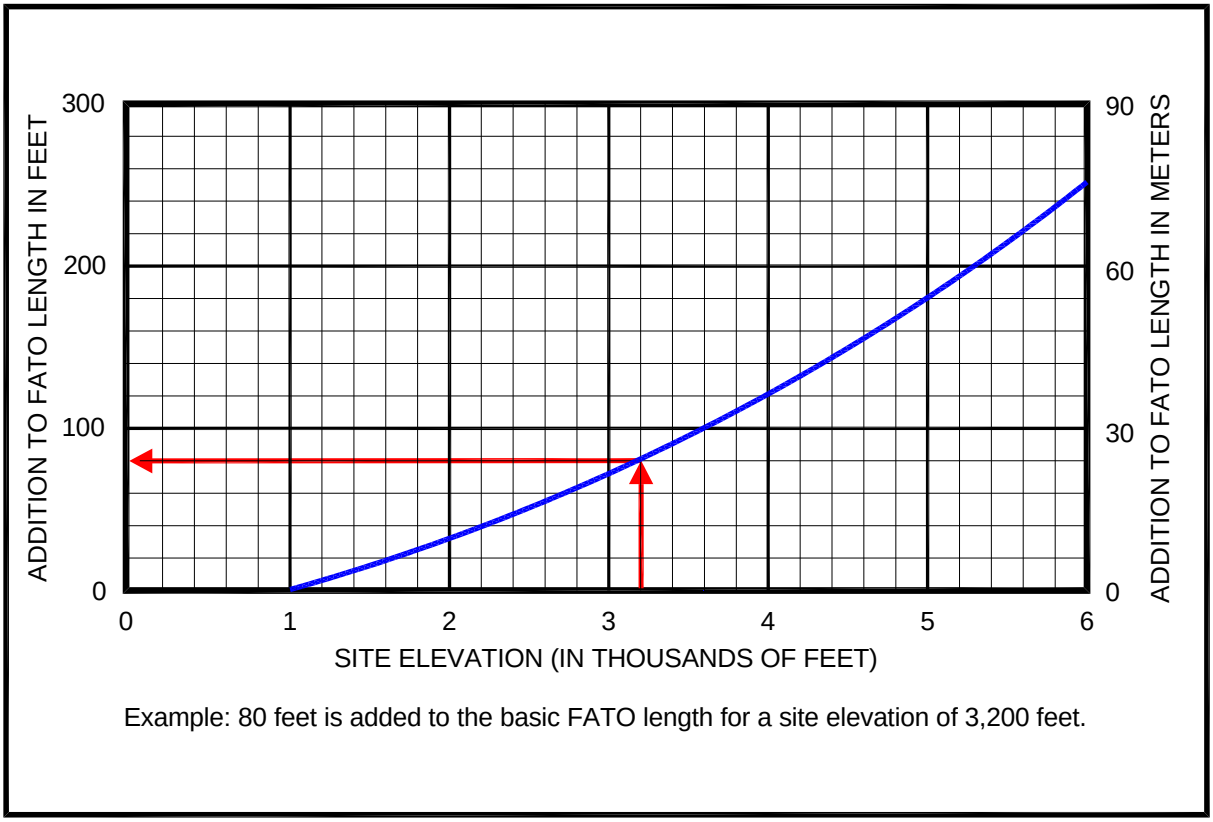


Figure 4–4. Additional FATO Length for Heliports at Higher Elevation: Hospital

c. FATO Surface characteristics. If the heliport operator marks the TLOF, the FATO outside the TLOF need not be load-bearing.

(1) Ground-level hospital heliports. If the heliport operator does not mark the TLOF, and/or intends that the helicopter be able to land anywhere within the FATO, design the FATO outside the TLOF and any FATO supporting structure, like the TLOF, to be capable of supporting the dynamic loads of the design helicopter.

(2) Elevated hospital heliports. The FATO outside the TLOF may extend into clear airspace. However, there are some helicopter performance benefits and increased operational flexibility if the FATO outside the TLOF is load bearing. Design the FATO outside of the TLOF to be load-bearing unless the minimum width and length or diameter of TLOF is increased to the overall length of the design helicopter.

(3) If the FATO is load bearing, design the portion abutting the TLOF to be contiguous with the TLOF, with the adjoining edges at the same elevation.

(4) If the FATO is unpaved, treat the FATO to prevent loose stones and any other flying debris caused by rotor downwash.

(5) When the FATO or the LBA in which it is located is elevated 4 feet (1.2 m) or more above its surroundings, part 1910.23 requires the provision of fall protection. The FAA recommends such protection for all platforms elevated 30 inches (76 cm) or more. However, do not use permanent railings or fences, since they would be safety hazards during helicopter operations. As an option, install a safety net, meeting state and local regulations but not less than 5 feet (1.5 m) wide. Design the safety net to have a load carrying capability of 25 lbs/sq ft (122 kg/sq m). Make sure the net, as illustrated in Figure 4–29,

does not project above the level of the TLOF. Fasten both the inside and outside edges of the safety net to a solid structure. Construct nets of materials that are resistant to environmental effects.

d. Mobile objects within the FATO. The FATO design standards in this AC assume the FATO is closed to other aircraft if a helicopter or other mobile object is within the FATO or the associated safety area.

e. Fixed objects within the FATO. Remove all fixed objects projecting above the FATO elevation except for lighting fixtures, which may project a maximum of 2 inches (5 cm). See Figure 7–3. For ground level heliports, remove all above-ground objects to the extent practicable.

f. FATO/FATO separation. If a heliport has more than one FATO, separate the perimeters of the two FATOs so the respective safety areas do not overlap. This separation assumes simultaneous approach/departure operations will not take place. If the heliport operator intends for the facility to support simultaneous operations, provide a minimum 200 foot (61 m) separation.

g. FATO gradients. Recommended FATO gradients are defined in Chapter 7.

408. Safety area. A safety area surrounds a FATO.

a. Safety area width. The standards for the width of the safety area are shown in Table 4-1. The width is the same on all sides. The provision or absence of standard heliport markings affects the width standards. As an option, design the safety area to extend into clear airspace.

b. Mobile objects within the safety area. The safety area design standards of this AC assume the TLOF and FATO are closed to other aircraft if a helicopter or other mobile object is within the FATO or the safety area.

c. Fixed objects within a safety area. Remove all fixed objects within a safety area projecting above the FATO elevation except for lighting fixtures, which may project a maximum of 2 inches (5 cm). See Figure 7–3. For ground level heliports, remove all above-ground objects to the extent practicable.

d. Safety area surface. The safety area need not be load bearing. Figure 4–5 depicts a non-load-bearing safety area. If possible, design the portion of the safety area abutting the FATO to be contiguous with the FATO with the adjoining edges at the same elevation. This is needed in order to avoid the risk of catching a helicopter skid or wheel. Clear the safety area of flammable materials and treat the area to prevent loose stones and any other flying debris caused by rotor wash.

e. Safety gradients. Recommended safety area gradients are defined in Chapter 7.

Table 4-1. Minimum VFR Safety Area Width as a Function of Hospital Heliport Markings

TLOF Perimeter Marked	Yes	Yes	No	No
FATO Perimeter Marked	Yes	Yes	Yes	Yes
Standard Hospital Marking Symbol	Yes	No	Yes	No
Hospital heliports	1/3 RD but not less than 10 ft (3 m)**	1/3 RD but not less than 20 ft (6 m)**	½ D but not less than 20 ft (6 m)	½ D but not less than 30 ft (9 m)

D: overall length of the design helicopter
RD: rotor diameter of the design helicopter
** Also applies when the heliport operator does not mark the FATO. Do not mark the FATO if (a) the FATO (or part of the FATO) is a non-load bearing surface and/or (b) the TLOF is elevated above the level of a surrounding load bearing area.

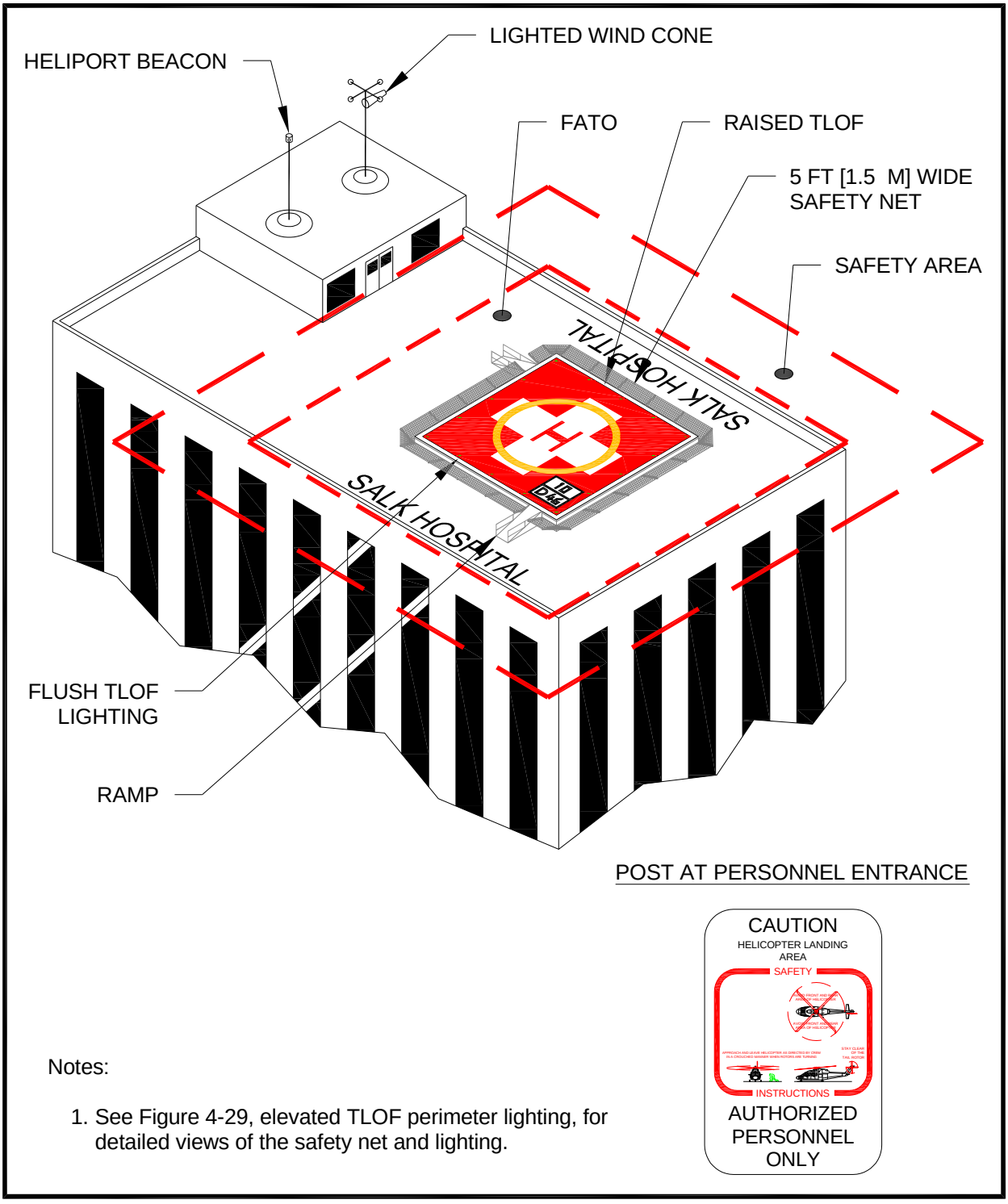


Figure 4–5. Rooftop Hospital Heliport: Hospital

409. VFR approach/departure paths. The purpose of approach/departure airspace as shown in Figure 4–6 is to provide sufficient airspace clear of hazards to allow safe approaches to and departures from the TLOF.

a. Number of approach/departure paths. Align preferred approach/departure paths with the predominant wind direction so downwind operations are avoided and crosswind operations are kept to a minimum. To accomplish this, design the heliport to have more than one approach/departure path. Base other approach/departure paths on the assessment of the prevailing winds or, when this information is not available, separate such flight paths and the preferred flight path by at least 135 degrees. (See Figure 4–6.) Designing a hospital heliport to have only a single approach/departure path is an undesirable option. A second flight path provides additional safety margin and operational flexibility. If it is not feasible to provide complete coverage of wind through multiple approach/departure paths, operational limitations may be necessary under certain wind conditions. See paragraph 101.

b. VFR approach/departure and transitional surfaces. Figure 4–6 illustrates the approach/departure and transitional surfaces.

(1) An approach/departure surface is centered on each approach/departure path. The approach/departure path starts at the edge of the FATO and slopes upward at 8:1 (8 units horizontal in 1 unit vertical) for a distance of 4,000 feet (1,219 m) where the width is 500 feet (152 m) at a height of 500 feet (152 m) above the heliport elevation.

(2) The transitional surfaces start from the edges of the FATO parallel to the flight path center line, and from the outer edges of approach/departure surface, and extend outwards at a slope of 2:1 (2 units horizontal in 1 unit vertical) for a distance of 250 feet (76 m) from the centerline. The transitional surface is not applied on the FATO edge opposite the approach/departure surface. See Figure 4–6.

(3) Make sure the approach/departure and transitional surfaces are free of penetrations unless an FAA aeronautical study determines such penetrations not to be hazards. The FAA conducts such aeronautical studies only at public heliports; heliports operated by a federal agency or the Department of Defense; and private airports with FAA-approved approach procedures. Paragraph 111 provides additional information on hazards to air navigation.

(4) At hospital heliports, an alternative to considering transitional surfaces is to increase the size of the 8:1 approach/departure surface for a distance of 2,000 feet (610 m) as shown in Figure 2–9 and Figure 2–11. The lateral extensions on each side of the 8:1 approach/departure surface start at the width of the FATO and increase so at a distance of 2,000 feet (610 m) from the FATO they are 100 feet (30 m) wide. Make sure obstacles do not penetrate into both Area A and Area B. Make sure obstacles do not penetrate into Area A or Area B unless the FAA determines that the penetration is not a hazard. Mark or light all such penetrations. See paragraph 111 for more information on hazard determinations.

c. Curved VFR approach/departure paths. As an option, include one curve in VFR approach/departure paths. As an option, design these paths to use the airspace above public lands, such as freeways or rivers. When including a curved portion in the approach/departure path, make sure the sum of the radius of the arc defining the center line and the length of the straight portion originating at the FATO is not less than 1,886 feet (575 m). Design the approach/departure path so the minimum radius of the curve is 886 feet (270 m) and that the curve follows a 1,000 feet (305 m) straight section. Design the approach/departure path so the combined length of the center line of the curved portion and the straight portion is 4,000 feet (1,219 m). See Figure 4–7. Figure 4–9 shows a curved approach/departure path for an 8:1 approach/departure surface.

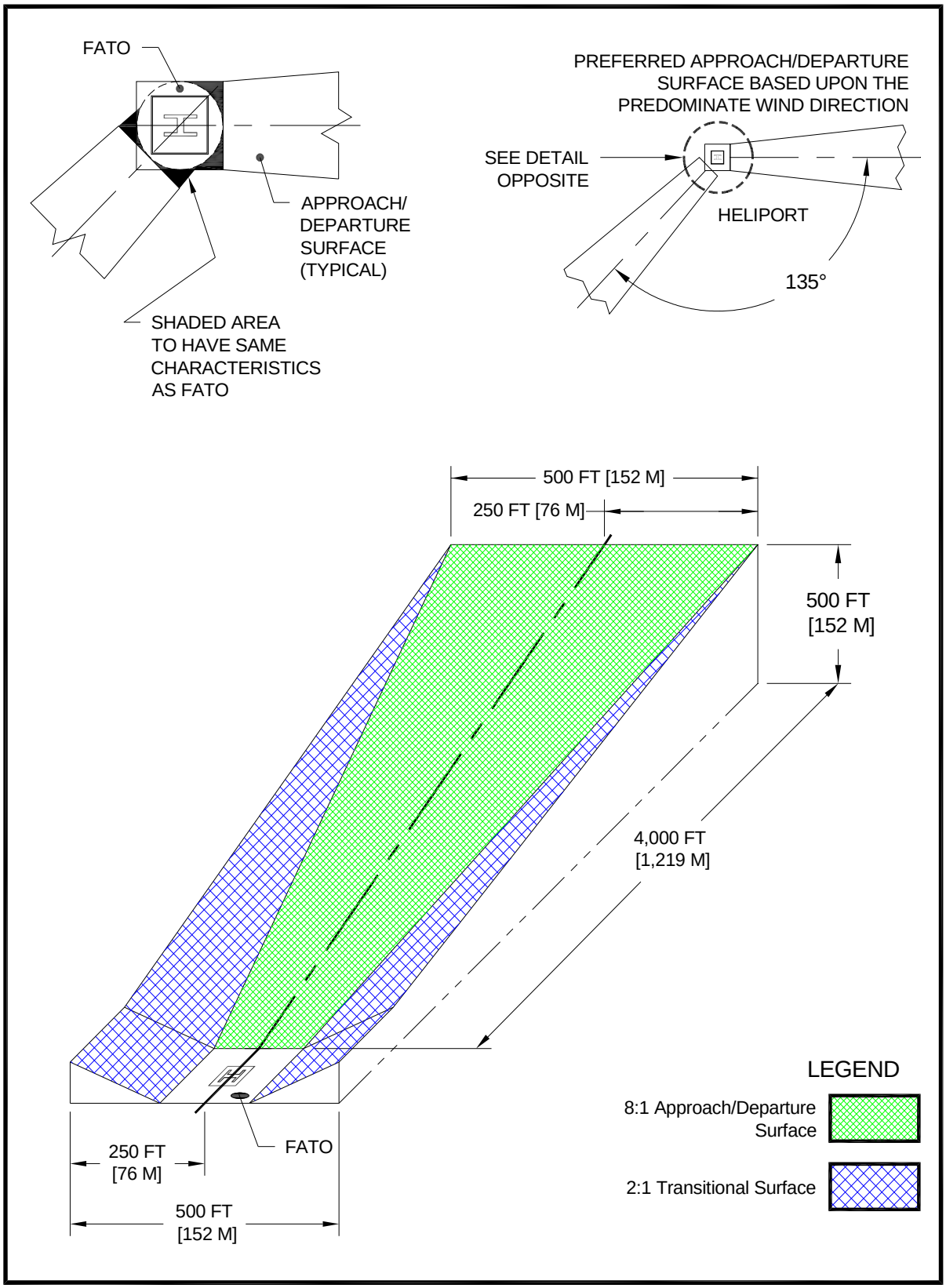
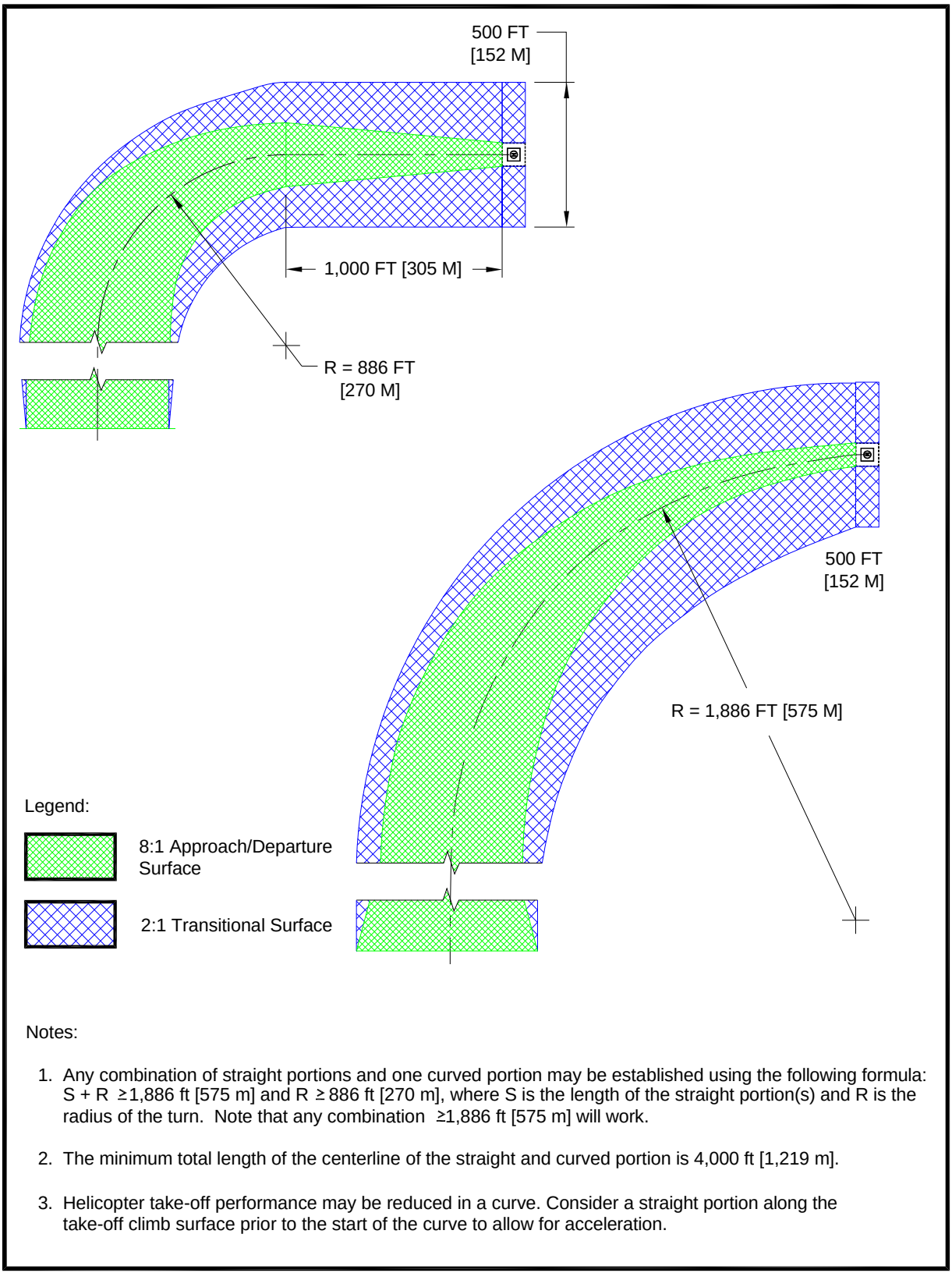


Figure 4–6. VFR Heliport Approach/Departure and Transitional Surfaces: Hospital



Notes:

1. Any combination of straight portions and one curved portion may be established using the following formula: S + R ≥1,886 ft [575 m] and R ≥ 886 ft [270 m], where S is the length of the straight portion(s) and R is the radius of the turn. Note that any combination ≥1,886 ft [575 m] will work.
2. The minimum total length of the centerline of the straight and curved portion is 4,000 ft [1,219 m].
3. Helicopter take-off performance may be reduced in a curve. Consider a straight portion along the take-off climb surface prior to the start of the curve to allow for acceleration.

Figure 4–7. Curved Approach/Departure: Hospital

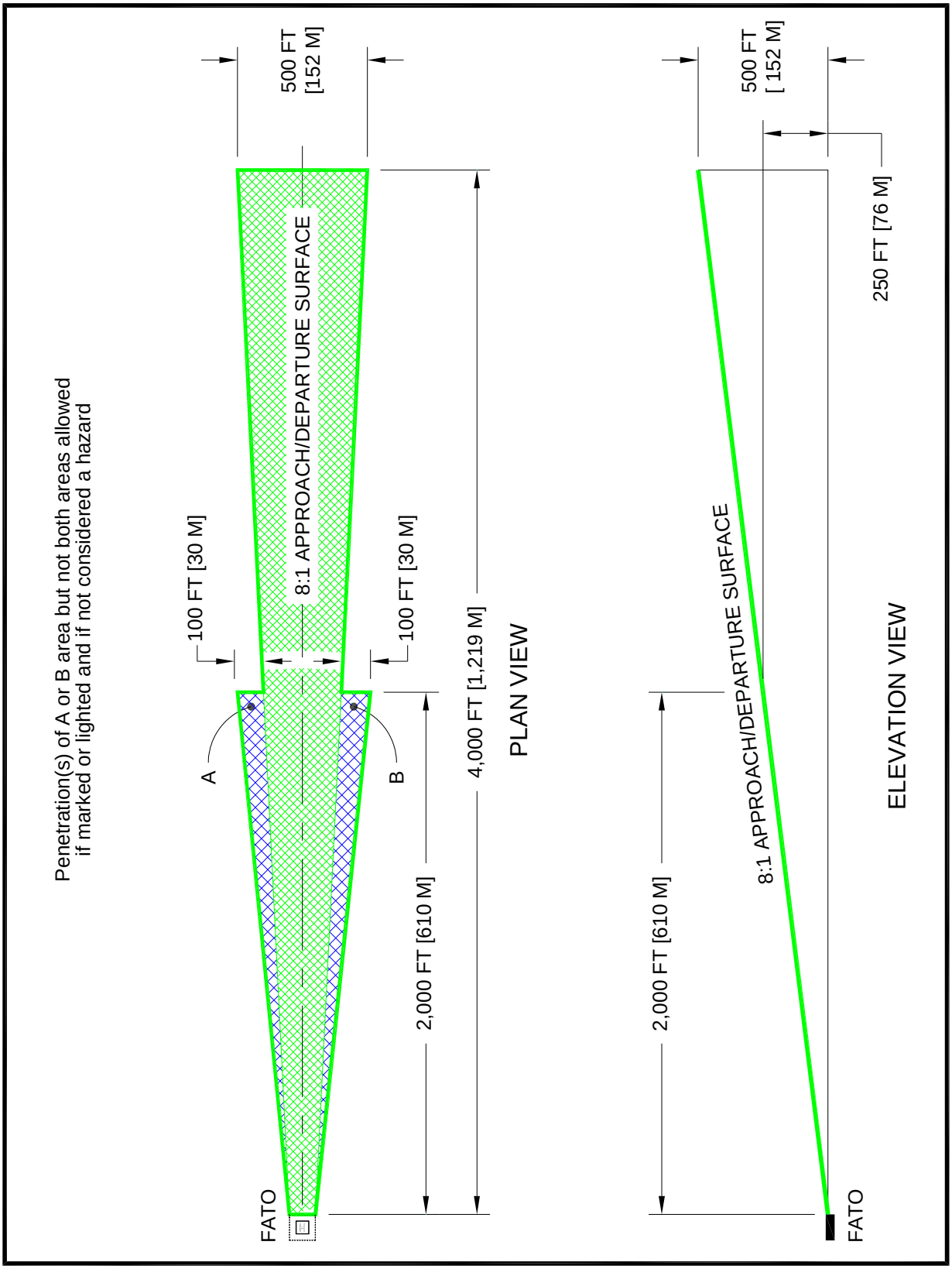
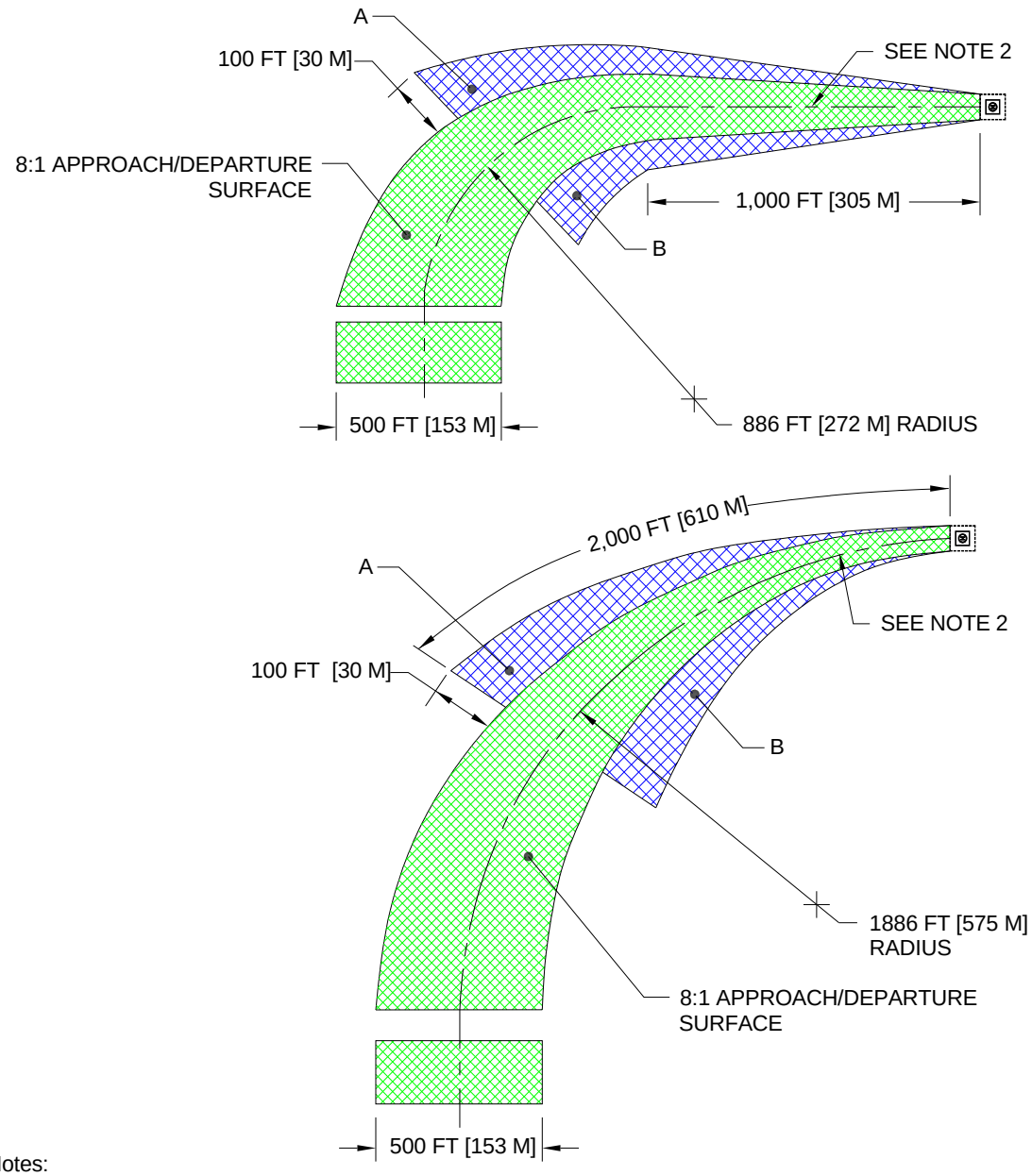


Figure 4–8. VFR Heliport Lateral Extension of the 8:1 Approach / Departure Surface: Hospital



Notes:

1. The approach surface may consist of one curved portion preceded and/or followed by one straight portion such that: S + R ≥1,886 ft [575 m] and R ≥886 ft [270 m], where S is the length of the straight portion(s) and R is the radius of the turn. Note that any combination ≥1,886 ft [575 m] will work.

2. The minimum total length of the centerline of the straight and curved portions is 4,000 ft [1,219 m].

3. Helicopter take-off performance may be reduced in a curve. Consider a straight portion along the take-off climb surface prior to the start of the curve to allow for acceleration.

4. Penetration(s) of A or B area but not both areas allowed if marked or lighted and if not considered a hazard.

Figure 4–9. VFR Heliport Lateral Extension of the Curved 8:1 Approach/Departure Surface: Hospital

d. Flight path alignment guidance. As an option, use flight path alignment markings and/or flight path alignment lights (see paragraphs 414 and 415) where it is desirable and practicable to indicate available approach and/or departure flight path direction(s). See Figure 4–10.

e. Periodic review of obstructions. Vigilant heliport operators reexamine obstacles in the vicinity of approach/departure paths on at least an annual basis. This reexamination includes an appraisal of the growth of trees near approach and departure paths. Paragraph 111 provides additional information on hazards to air navigation. Pay particular attention to obstacles that need to be marked or lighted. It may be helpful to maintain a list of the GPS coordinates and the peak elevation of obstacles.

410. Heliport protection zone (HPZ) The FAA recommends the establishment of an HPZ for each approach/departure surface. The HPZ is the area under the 8:1 approach/departure surface starting at the FATO perimeter and extending out for a distance of 280 feet (85.3 m), as illustrated in Figure 4–11. The HPZ is intended to enhance the protection of people and property on the ground. This is achieved through heliport owner control over the HPZ. Such control includes clearing HPZ areas (and maintaining them clear) of incompatible objects and activities. The FAA discourages residences and places of public assembly in an HPZ. (Churches, schools, hospitals, office buildings, shopping centers, and other uses with similar concentrations of persons typify places of public assembly.) Do not locate hazardous materials, including fuel, in the HPZ.

411. Wind cone.

a. Specification. Use a wind cone conforming to AC 150/5345-27, Specification for Wind Cone Assemblies, to show the direction and magnitude of the wind. Use a color that provides the best possible color contrast to its background.

b. Wind cone location. Locate the wind cone so it provides the pilot with valid wind direction and speed information in the vicinity of the heliport under all wind conditions.

(1) At many landing sites, there may be no single, ideal location for the wind cone. At other sites, it may not be possible to site a wind cone at the ideal location. In such cases, install more than one wind cone in order to provide the pilot with all the wind information needed for safe operations.

(2) Place the wind cone so a pilot on the approach path is able to see it clearly when the helicopter is 500 feet (150 m) from the TLOF.

(3) Place the wind cone so pilots can see it from the TLOF.

(4) To avoid presenting an obstruction hazard, locate the wind cone(s) outside the safety area, so it does not penetrate the approach/departure or transitional surfaces.

c. Wind cone lighting. For night operations, illuminate the wind cone, either internally or externally, to ensure it is clearly visible.

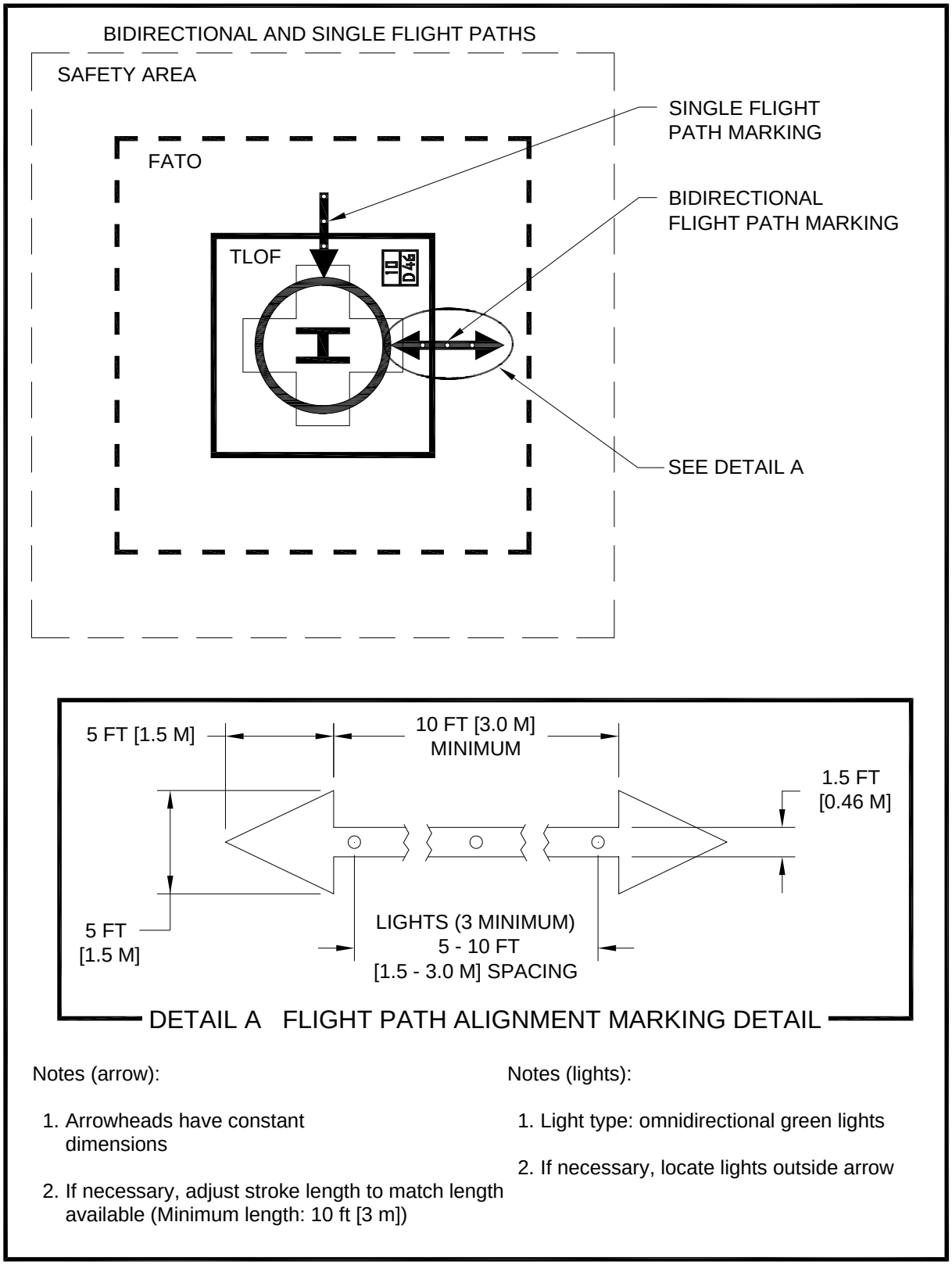


Figure 4–10. Flight Path Alignment Marking and Lights: Hospital

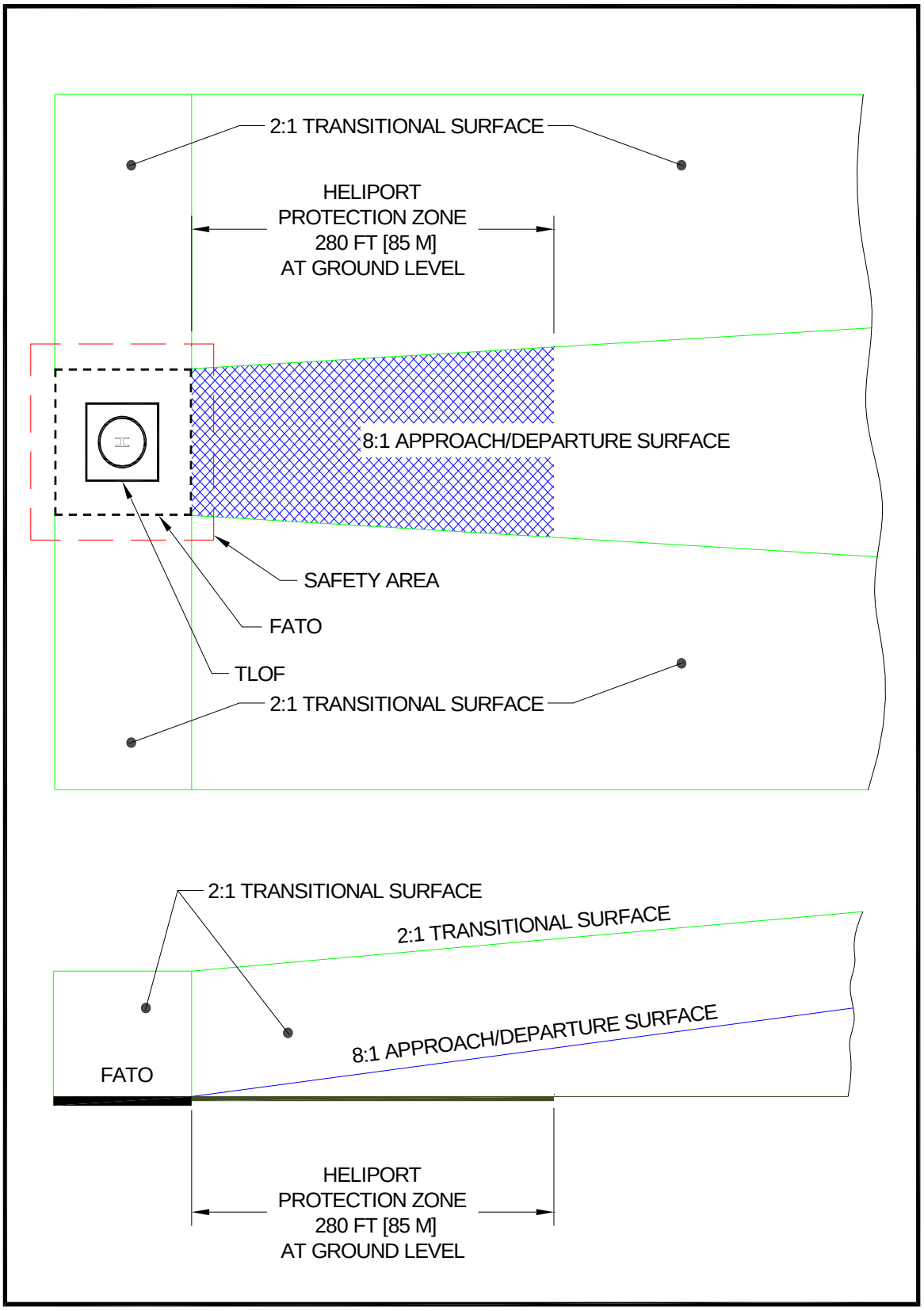


Figure 4–11. Heliport Protection Zone: Hospital

412. Taxiways and taxi routes. Taxiways and taxi routes provide for the movement of helicopters from one part of a landing facility to another. They provide a connecting path between the FATO and a parking area. They also provide a maneuvering aisle within the parking area. A taxi route includes the taxiway plus the appropriate clearances needed on both sides. The relationship between a taxiway and a taxi route is illustrated in Figure 4–12, Figure 4–13, and Figure 4–14. At hospital heliports with no parking or refueling area outside the TLOF(s), it is not necessary to provide a taxi route or taxiway.

a. Taxiway/taxi route widths. The dimensions of taxiways and taxi routes are a function of helicopter size, taxiway/taxi route marking, and type of taxi operations (ground taxi versus hover taxi). These dimensions are defined in Table 4-2. Normally, the requirement for hover taxi dictates the taxiway/taxi route widths. However, when the fleet comprises a combination of large ground taxiing helicopters and smaller air taxiing helicopters, the larger aircraft may dictate the taxiway/taxi route widths. If wheel-equipped helicopters taxi with wheels not touching the surface, design the facility with hover taxiway widths rather than ground taxiway widths. Where the visibility of the centerline marking cannot be guaranteed at all times, such as locations where snow or dust commonly obscure the centerline marking and it is not practical to remove it, determine the minimum taxiway/taxi route dimensions as if there was no centerline marking.

b. Surfaces. For ground taxiways, provide a surface that is portland cement concrete, asphalt, or a surface, such as turf, stabilized in accordance with the standards of Item P-217 of AC 150/5370-10. For unpaved portions of taxiways and taxi routes, provide a turf cover or treat the surface in some way to prevent dirt and debris from being raised by a taxiing helicopter’s rotor wash.

c. Gradients. Taxiway and taxi route gradient standards are defined in Chapter 7.

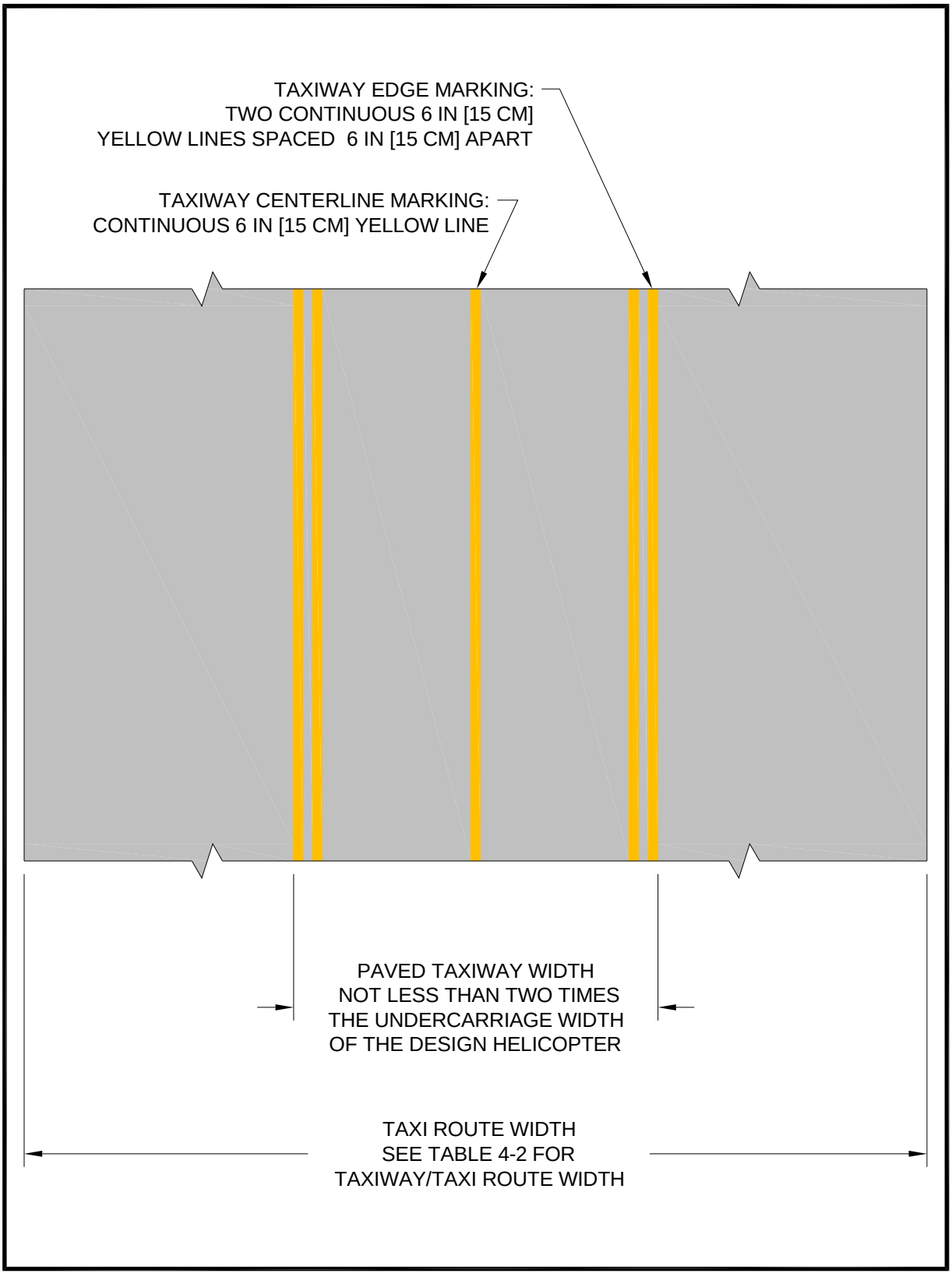


Figure 4–12. Taxiway/Taxi Route Relationship – Paved Taxiway: Hospital

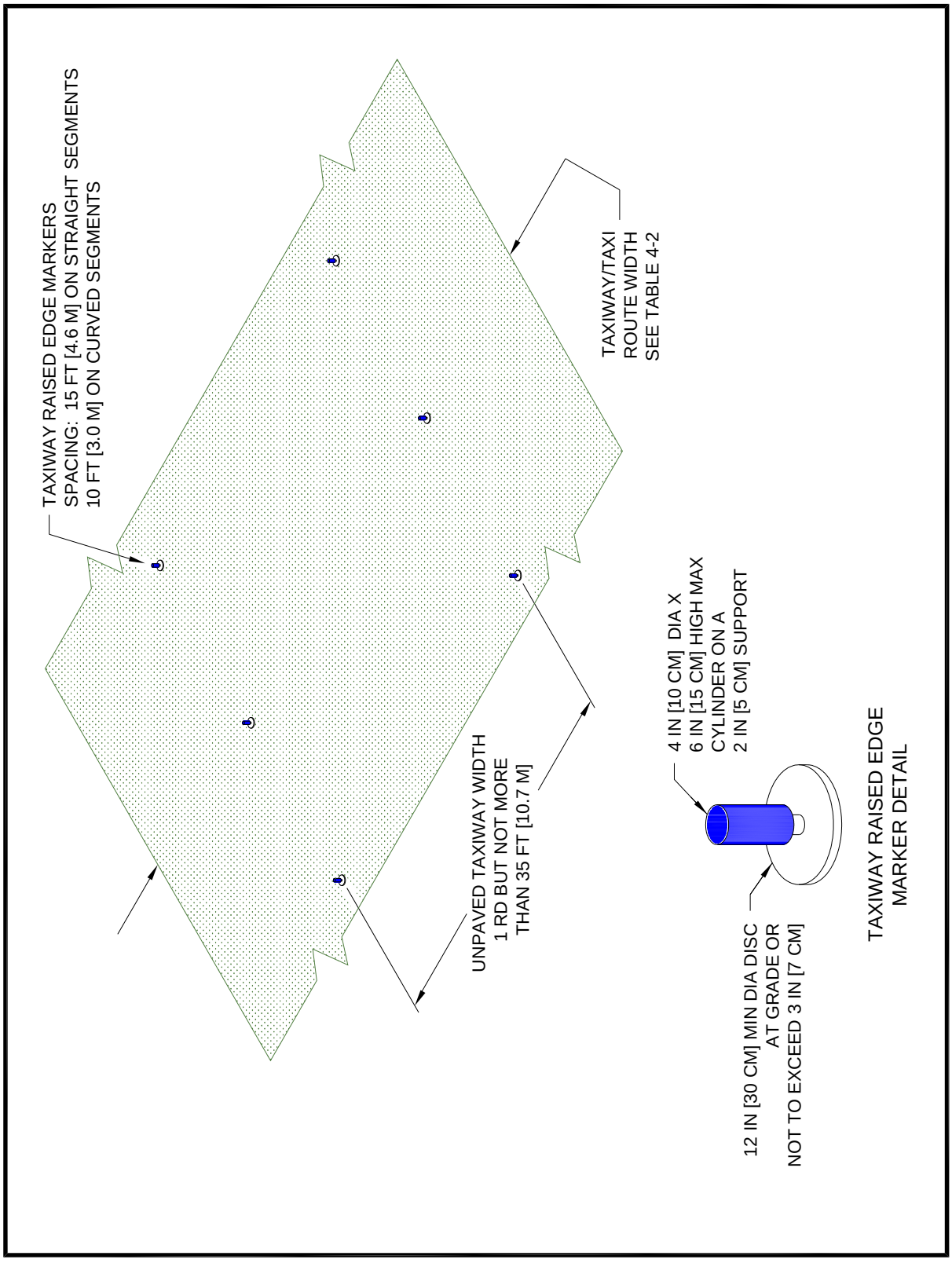


Figure 4–13. Taxiway/Taxi Route Relationship –
Unpaved Taxiway with Raised Edge Markers: Hospital

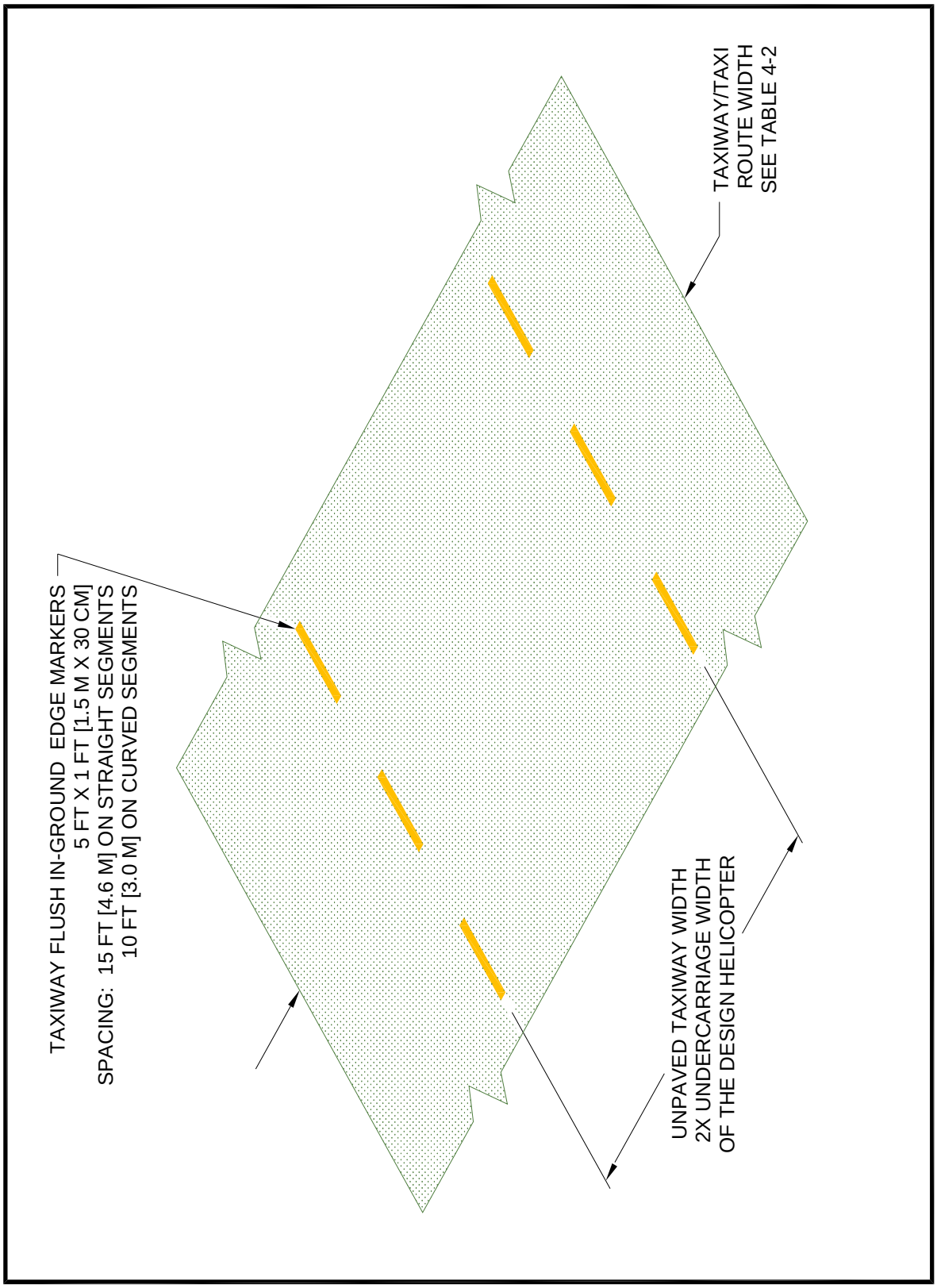


Figure 4–14. Taxiway/Route Relationship –
Unpaved Taxiway with Flush Edge Markers: Hospital

Table 4-2. Taxiway / Taxi Route Dimensions – Hospital Heliports

Taxiway (TW) Type	Minimum Width of Paved Area	Centerline Marking Type	TW Edge Marking Type	Lateral Separation Between TW Edge Markings	Total Taxi Route Width
Ground Taxiway	2 x UC	Painted	Painted	2 x UC	1½ RD
			Elevated	1 RD but not greater than 35 ft (10.7 m)	
	Unpaved but stabilized for ground taxi	None	Flush	2 x UC	
			Elevated	1 RD but not greater than 35 ft (10.7 m)	
Hover Taxiway	2 x UC	Painted	Painted	2 x UC	2 RD
	Unpaved	None	Elevated or Flush	1 RD but not greater than 35 ft (10.7 m)	
RD: rotor diameter of the design helicopter TW: taxiway UC: undercarriage length or width (whichever is greater) of the design helicopter					

413. Helicopter parking. If more than one helicopter at a time is expected at a heliport, design the facility with an area designated for parking helicopters. The size of this area depends on the number and size of specific helicopters to be accommodated. It is not necessary that every parking position accommodate the design helicopter. Design individual parking positions to accommodate the helicopter size and weight expected to use the parking position at the facility. However, use the design helicopter to determine the separation between parking positions and taxi routes. Use the larger helicopter to determine the separation between parking positions intended for helicopters of different sizes. Design the parking positions to support the static loads of the helicopter intended to use the parking area. Design parking areas as one large, paved apron or as individual, paved parking positions. Ground taxi turns of wheeled helicopters are significantly larger than a hover turn. Consider the turn radius of helicopters when designing taxi intersections and parking positions for wheeled helicopters. Design heliport parking areas so helicopters will be parked in an orientation that keeps the "avoid areas" around the tail rotors (see Figure 4–18, Figure 4–19, and Figure 4–20) clear of passenger walkways.

a. Location. Do not locate aircraft parking areas under an approach/departure surface. However, as an option, allow aircraft parking areas under the transitional surfaces.

(1) For "turn around" parking positions, locate the parking position to provide a minimum distance between the tail rotor arc and any object, building, safety area, or other parking position. The minimum distance is 10 feet (3 m) for ground taxi operations and the greater of 10 feet (3 m) or $^{1}/_{3}$ RD for hover taxi operations. See Figure 4–15 and Figure 4–18.

(2) For "taxi-through" and "back-out" parking positions, locate the parking position to provide a minimum distance between the main rotor circle and any object, building, safety area, or other parking position. The minimum distance is 10 feet (3 m) for ground taxi operations and the greater of 10 feet (3 m) or $^{1}/_{3}$ RD for hover taxi operations. See Figure 4–15, Figure 4–17, and Figure 4–19.

(3) Locate the parking position to provide a minimum distance between the main rotor circle and the edge of any taxi route. Design parking positions such that the helicopter taxis through, turns around, or backs out to depart. The minimum distance is $^{1}/_{3}$ RD for "turn around" and "taxi through" parking areas, and ½ RD for "back-out" parking areas. See Figure 4–15, Figure 4–16, and Figure 4–17.

b. Parking position sizes are dependent upon the helicopter size. The clearance between parking positions are dependent upon the type of taxi operations (ground taxi or hover taxi) and the intended paths for maneuvering in and out of the parking position. The more demanding requirement will dictate what is required at a particular site. Usually, the parking area requirements for skid-equipped helicopters will be

the most demanding. However, when the largest helicopter is a very large, wheeled aircraft (for example, the S-61), and the skid-equipped helicopters are all much smaller, the parking requirements for wheeled helicopters may be the most demanding. If wheel-equipped helicopters taxi with wheels not touching the surface, design parking areas based on hover taxi operations rather than ground taxi operations.

(1) If all parking positions are the same size, design them to be large enough to accommodate the largest helicopter that will park at the heliport.

(2) When there is more than one parking position, as an option design the facility with parking positions of various sizes and at least one position to accommodate the largest helicopter that will park at the heliport. Design other parking positions to be smaller, designed for the size of the individual or range of individual helicopters parking at that position. Figure 4–20 also provides guidance on parking position identification, size, and weight limitations.

(3) "Taxi-through" parking positions are illustrated in Figure 4–15. When using this design for parking positions, the heliport owner and operator take steps to ensure all pilots are informed that "turn-around" or "back-up" departures from the parking position are not permitted.

(4) "Turn-around" parking positions are illustrated in Figure 4–17.

(5) "Back-out" parking positions are illustrated in Figure 4–17. When using this design for parking positions, design the adjacent taxiway to accommodate hover taxi operations so the width of the taxiway will be adequate to support "back-out" operations.

c. Parking pads. When partially paving a parking area, design the smallest dimension of the paved parking pad to be a minimum of two times the maximum dimension (length or width, whichever is greater) of the undercarriage or the RD, whichever is less, of the largest helicopter that will use this parking position. Place the parking pad in the center of the parking position circle**.**

d. Walkways. At parking positions, provide marked walkways where practicable. Design the pavement to drain away from walkways.

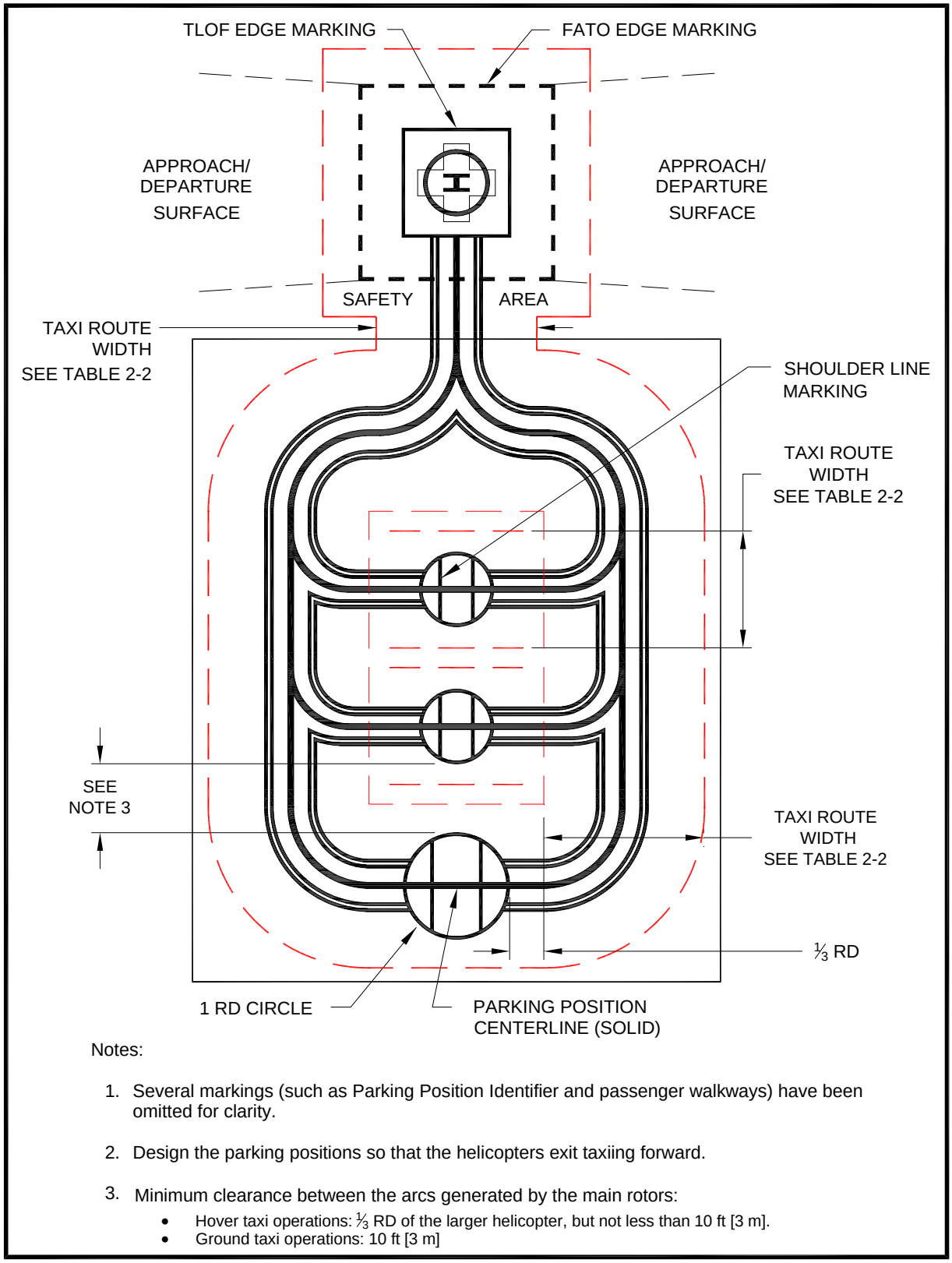
e. Fueling. Design the facility to allow fueling with the use of a fuel truck or a specific fueling area with stationary fuel tanks.

(1) Various federal, state, and local requirements for petroleum handling facilities apply to systems for storing and dispensing fuel. Find guidance in AC 150/5230-4, Aircraft Fuel Storage, Handling, and Dispensing on Airports. Additional information may be found in various National Fire Protection Association (NFPA) publications. For more reference material, see Appendix D.

(2) Do not locate fueling equipment in the TLOF, FATO, or safety area. Design and mark separate fueling locations to minimize the potential for helicopters to collide with the dispensing equipment. Design fueling areas so there is no object tall enough to be hit by the main or tail rotor blades within a distance of RD from the center point of the position where the helicopter would be fueled (providing ½ RD clearance from the rotor tips). If this is not practical at an existing facility, install long fuel hoses.

(3) Lighting. Light the fueling area if night fueling operations are contemplated. Ensure any light poles do not constitute an obstruction hazard.

f. Tiedowns. Install recessed tiedowns to accommodate extended or overnight parking of based or transient helicopters. If tiedowns are provided, recess them so as not to be a hazard to helicopters. Ensure any depression associated with the tiedowns is of a diameter not greater than ½ the width of the smallest helicopter landing wheel or landing skid anticipated to be operated on the heliport surface. In addition, provide storage for tiedown chocks, chains, cables and ropes off the heliport surface to avoid fouling landing gear. Find guidance on recessed tiedowns in AC 20-35, Tiedown Sense.



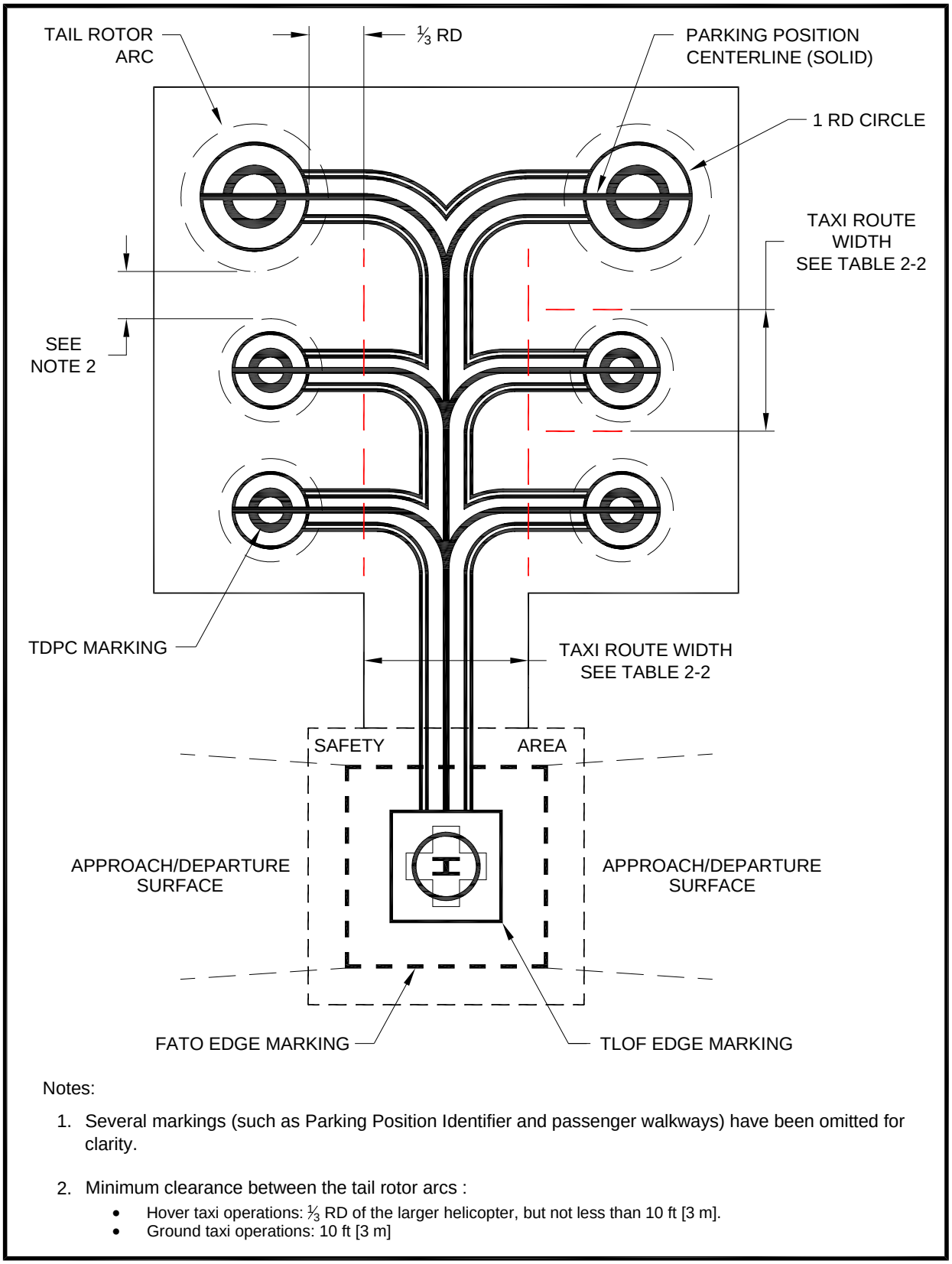
Notes:

1. Several markings (such as Parking Position Identifier and passenger walkways) have been omitted for clarity.

2. Design the parking positions so that the helicopters exit taxiing forward.

3. Minimum clearance between the arcs generated by the main rotors:
   - Hover taxi operations: ⅓ RD of the larger helicopter, but not less than 10 ft [3 m].
   - Ground taxi operations: 10 ft [3 m]

Figure 4–15. Parking Area Design –
"Taxi-through" Parking Positions: Hospital

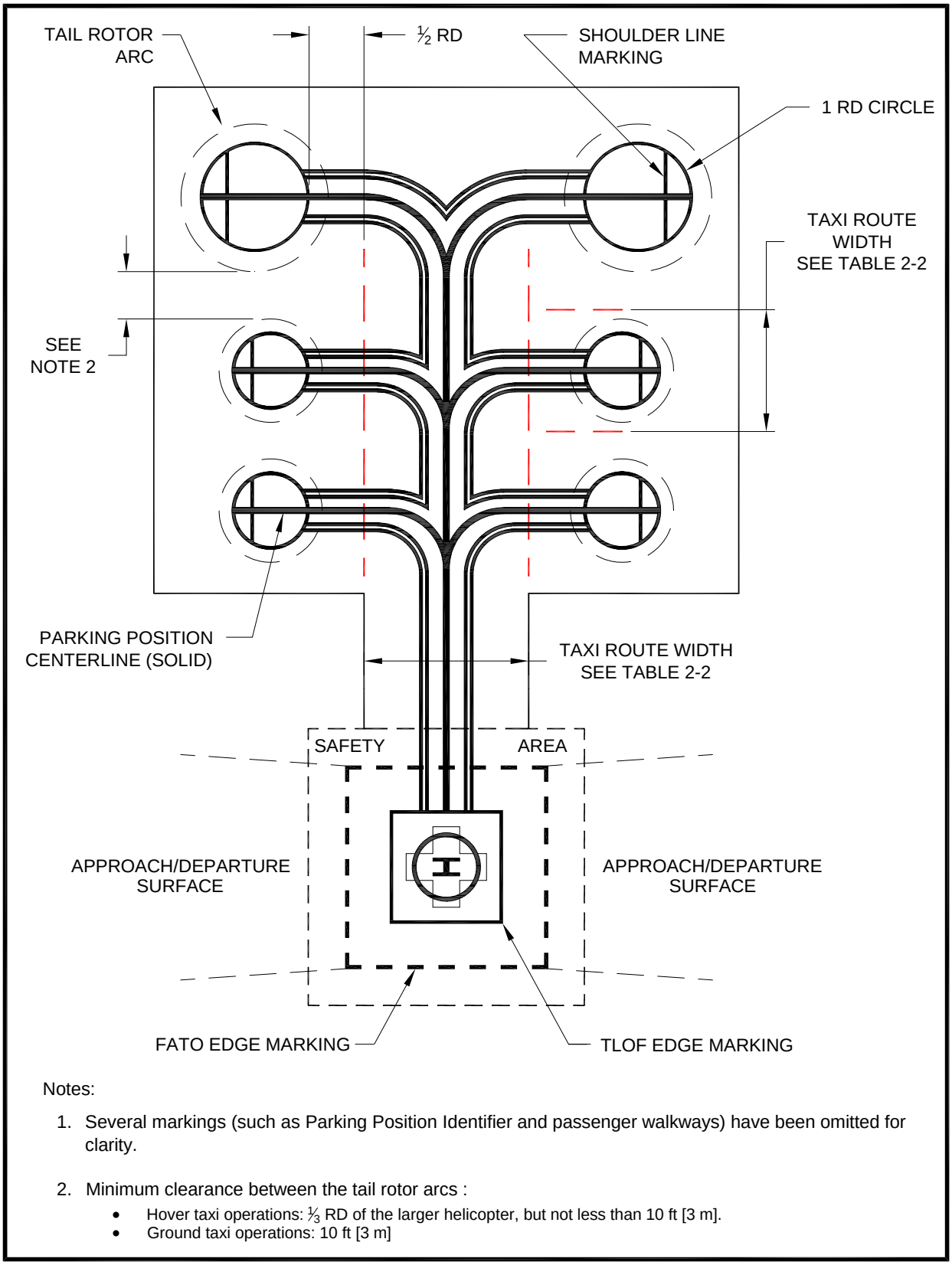


Notes:

1. Several markings (such as Parking Position Identifier and passenger walkways) have been omitted for clarity.

2. Minimum clearance between the tail rotor arcs :
   - Hover taxi operations: ⅓ RD of the larger helicopter, but not less than 10 ft [3 m].
   - Ground taxi operations: 10 ft [3 m]

Figure 4–16. Parking Area Design – "Turn-around" Parking Positions: Hospital

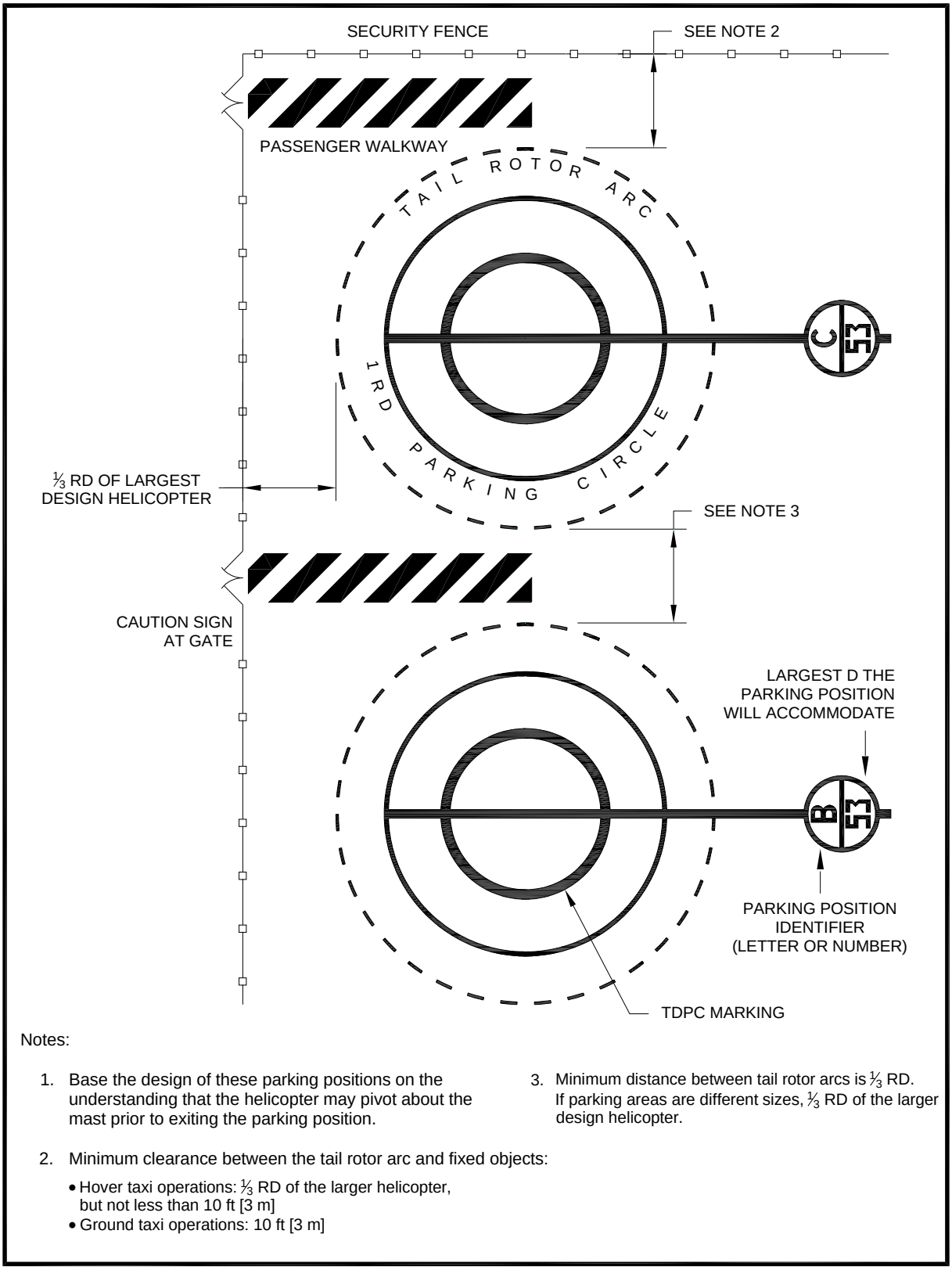


Notes:

1. Several markings (such as Parking Position Identifier and passenger walkways) have been omitted for clarity.

2. Minimum clearance between the tail rotor arcs :
   - Hover taxi operations: ⅓ RD of the larger helicopter, but not less than 10 ft [3 m].
   - Ground taxi operations: 10 ft [3 m]

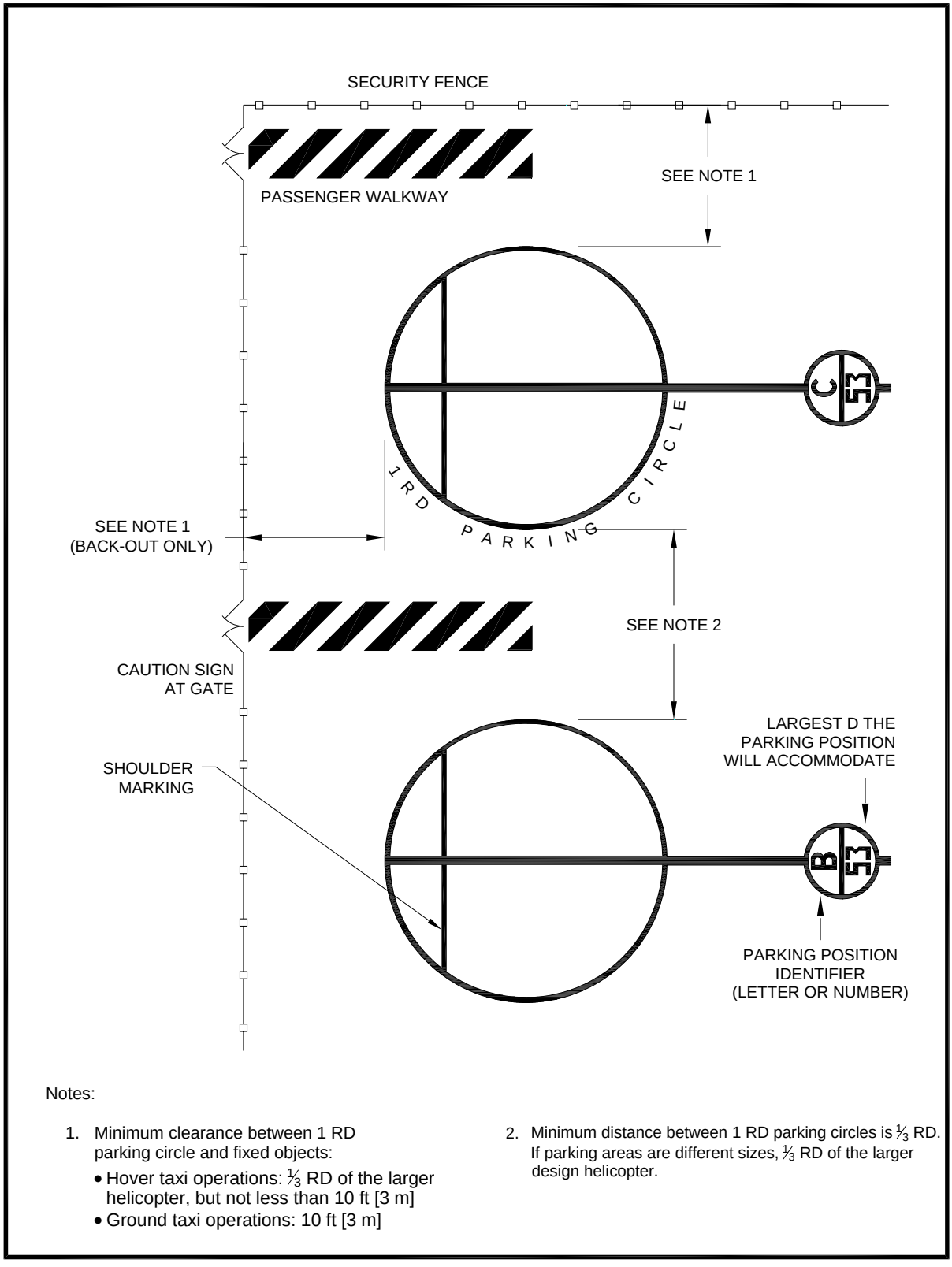
Figure 4–17. Parking Area Design – "Back-out" Parking Positions: Hospital



Notes:

1. Base the design of these parking positions on the understanding that the helicopter may pivot about the mast prior to exiting the parking position.
2. Minimum clearance between the tail rotor arc and fixed objects:
   - Hover taxi operations: ⅓ RD of the larger helicopter, but not less than 10 ft [3 m]
   - Ground taxi operations: 10 ft [3 m]
3. Minimum distance between tail rotor arcs is ⅓ RD. If parking areas are different sizes, ⅓ RD of the larger design helicopter.

Figure 4–18. "Turn-around" Helicopter Parking Position Marking: Hospital



Notes:

1. Minimum clearance between 1 RD parking circle and fixed objects:
   - Hover taxi operations: ⅓ RD of the larger helicopter, but not less than 10 ft [3 m]
   - Ground taxi operations: 10 ft [3 m]
2. Minimum distance between 1 RD parking circles is ⅓ RD. If parking areas are different sizes, ⅓ RD of the larger design helicopter.

Figure 4–19. "Taxi-through" and "Back-out" Helicopter Parking Position Marking: Hospital

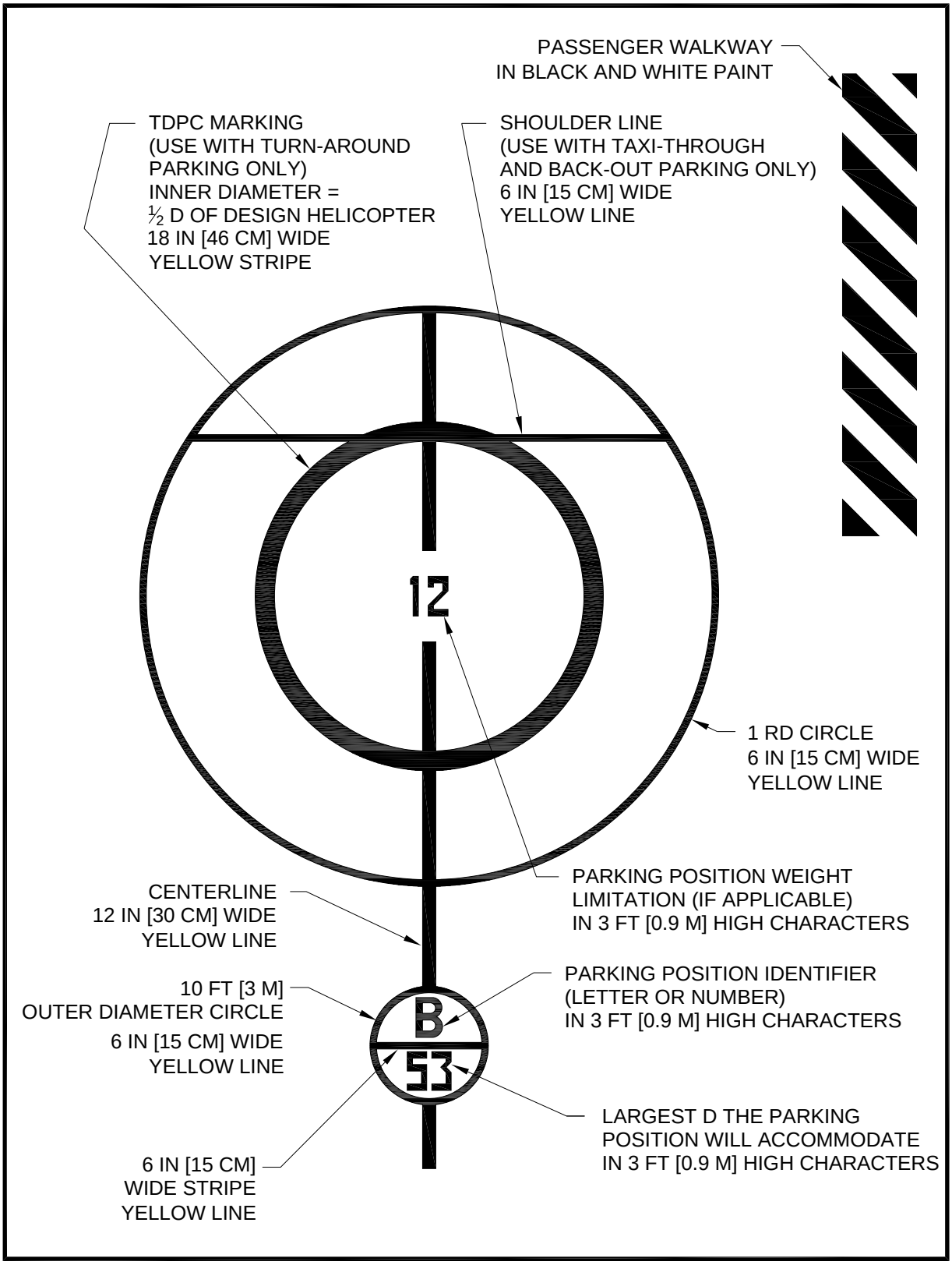


Figure 4–20. Parking Position Identification, Size, and Weight Limitations: General Aviation

414. Heliport markers and markings. Markers and/or surface markings identify the facility as a heliport. Use paint or preformed material for surface markings (see AC 150/5370-10, Item P-620, for specifications for paint and preformed material). Reflective paint and reflective markers may also be used, though overuse of reflective material can be blinding to a pilot using landing lights. As an option, outline lines/markings with a 6-inch wide (15 cm) line of a contrasting color to enhance conspicuity. Place markings that define the edges of a TLOF, FATO, taxiway or apron within the limits of those areas. Use the following markers and markings:

a. Hospital heliport identification marking. The identification marking identifies the location as a hospital heliport, marks the TLOF and provides visual cues to the pilot.

(1) Standard hospital heliport identification symbol. Mark the TLOF with a red "H" in a white cross. The minimum height of the "H" is 10 feet (3 m). Locate the "H" in the center of the TLOF and orient it on the axis of the preferred approach/departure path. Place a 12-inch wide red bar under the "H" when it is necessary to distinguish the preferred approach/departure direction. The proportions and layout of the standard hospital heliport identification symbol are illustrated in Figure 4–21. Increase the dimensions of the "H" and cross proportionately for larger TLOFs.

(2) Alternative marking. As an alternative to the standard marking, use a red "H" with a white 6-inch (15 cm) wide border within a red cross with a 12 inch (30 cm) wide white border and a surrounding red TLOF. Where it is impractical to paint the whole TLOF red, paint the TLOF so the minimum dimension (length, width, or diameter) of the outer red area is equal to the RD of the design helicopter but not less than 40 feet (12.2 m). Figure 4–22 illustrates this alternative marking. Increase the dimensions of the "H" and cross proportionately for larger TLOFs.

(3) Winter operations. In winter weather at a heliport with a dark TLOF surface, the marking in Figure 4–22 will absorb more heat from the sun and more readily melt residual ice and snow. In contrast, the white area in Figure 4–21 is more likely to be icy during winter weather. Consequently, in areas that experience ice and snow, use the markings in Figure 4–22 for unheated TLOFs.

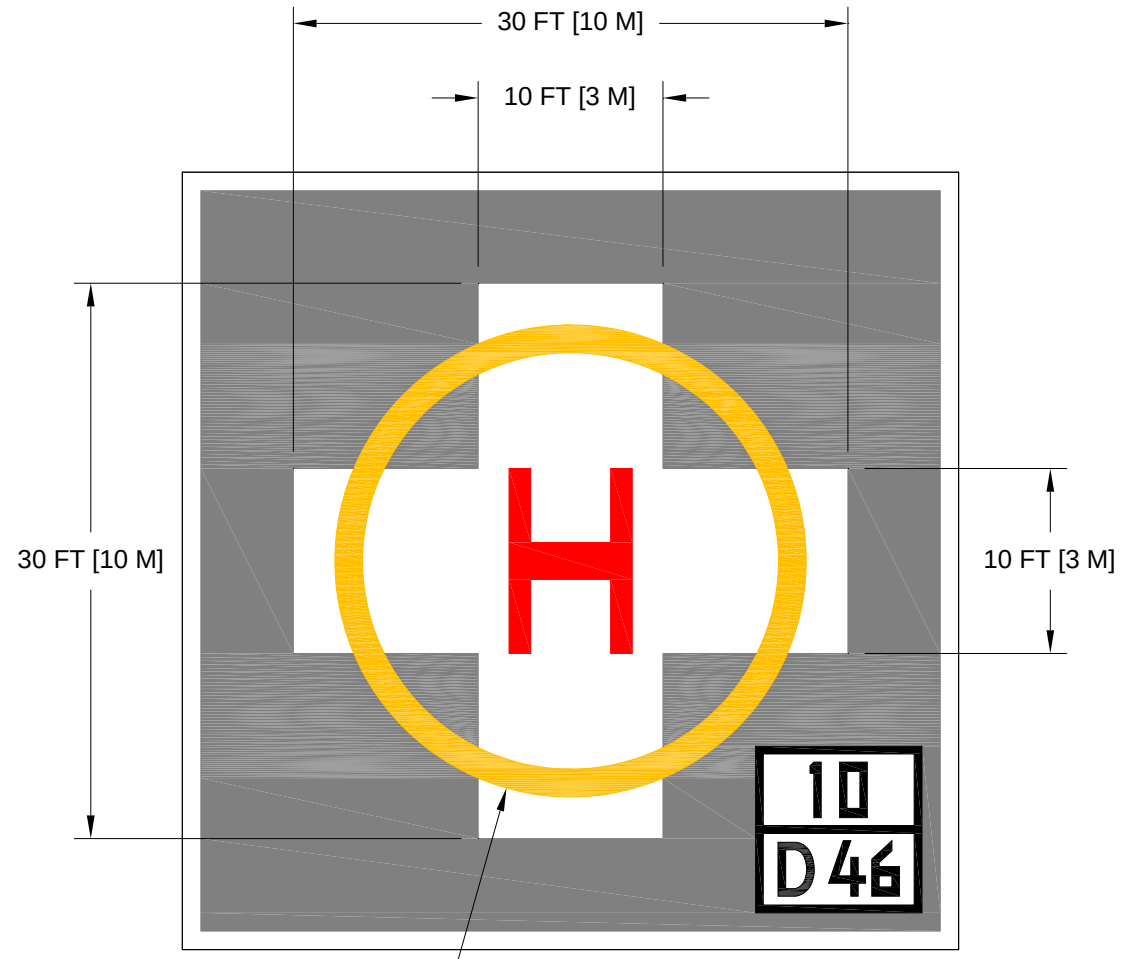
b. TLOF markings.

(1) TLOF perimeter marking. Mark the TLOF perimeter with markers and/or lines. See paragraph 408 and Table 4-1 for guidance on increasing the size of the safety area if the TLOF perimeter is not marked.

(a) Paved TLOFs. Define the perimeter of a paved or hard surfaced TLOF with a continuous, 12-inch-wide (30 cm), white line. See Figure 4–23.

(b) Unpaved TLOFs. Define the perimeter of an unpaved TLOF with a series of 12-inch-wide (30 cm), flush, in-ground markers, each approximately 5 feet (1.5 m) in length with end-to-end spacing of not more than 6 inches (15 cm). See Figure 4–24.

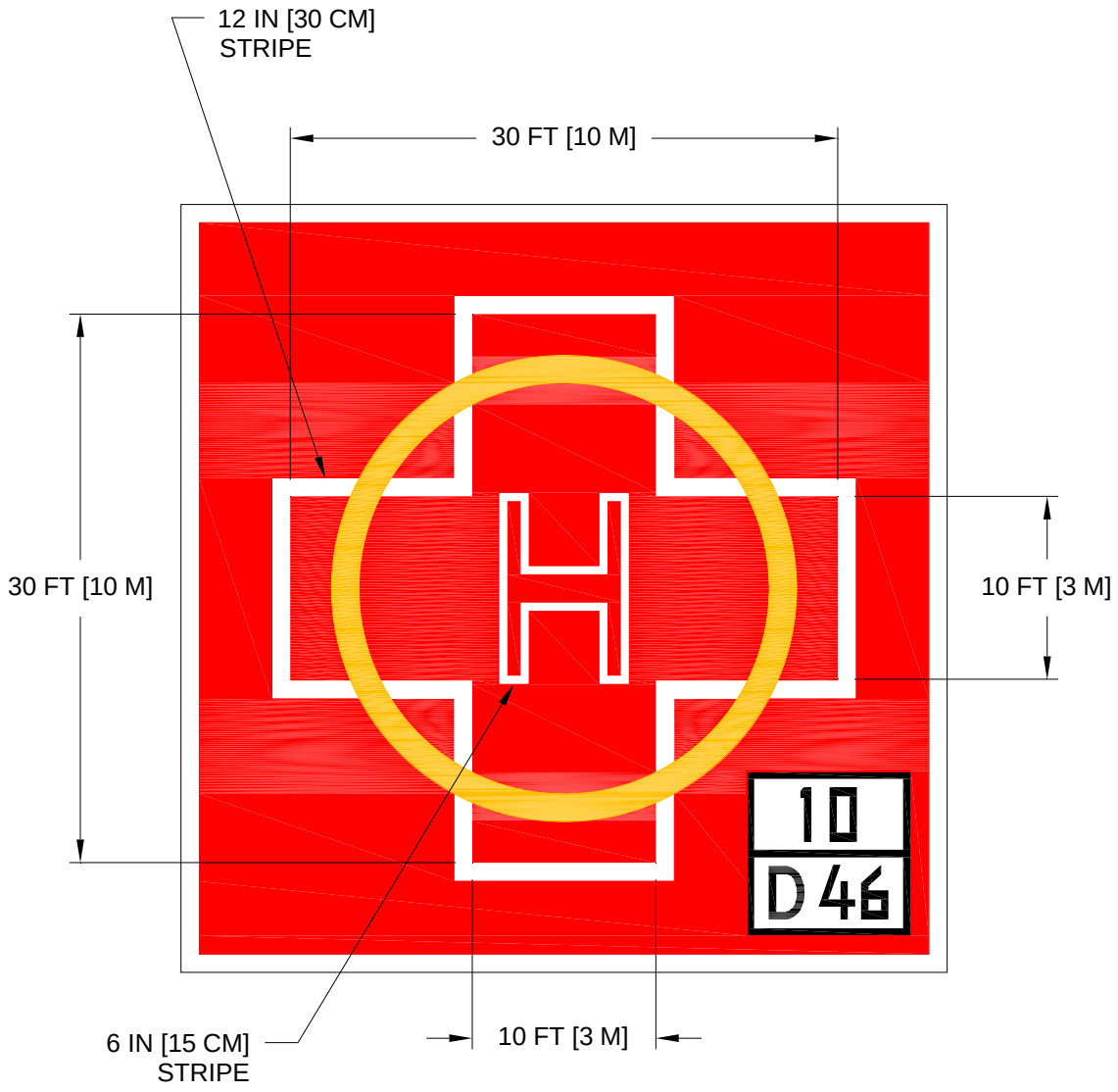
(2) Touchdown/positioning circle (TDPC) marking. Use an optional TDPC marking to provide guidance to allow a pilot to touch down in a specific position on paved surfaces. When the pilot's seat is over the marking, the undercarriage will be inside the LBA, and all parts of the helicopter will be clear of any obstacle by a safe margin. A TDPC marking is a yellow circle with an inner diameter of ½ D and a line width of 18 inches (46 cm). Locate a TDPC marking in the center of a TLOF. See Figure 4–21, Figure 4–22, and Figure 4–23.



Notes:

1. Standard TLOF perimeter stripe of 12 in [30 cm]. See figure 4-25 for "H", touchdown position, overall length and weight limitation box dimensions.
2. The standard hospital identification is a red H within a white cross.
3. An option may be a red H within a white cross surrounded by a 12 in [30 cm] wide red border (not illustrated).
4. The area outside of the cross may be colored red.

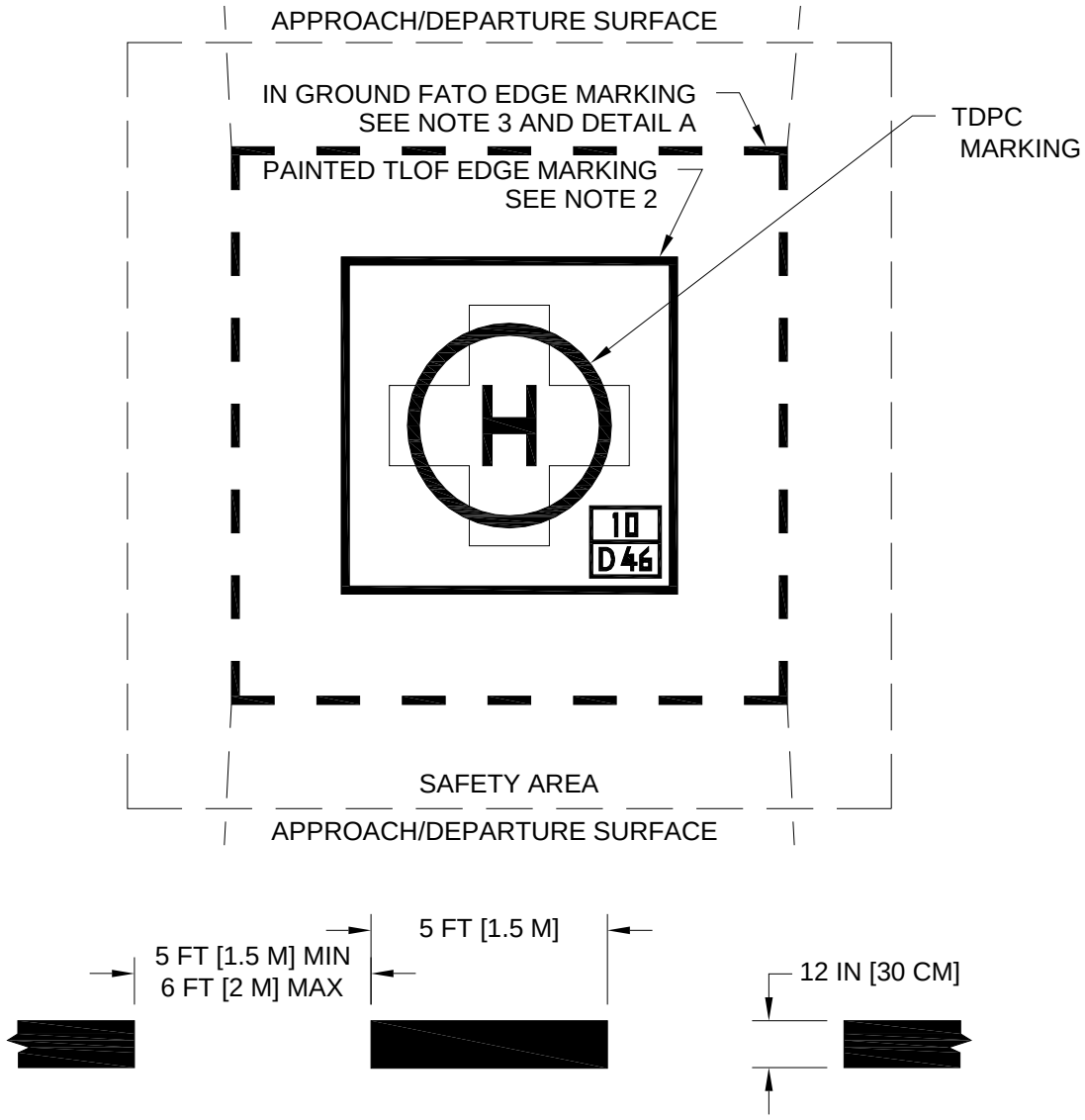
Figure 4–21. Standard Hospital Heliport Identification Symbols: Hospital



Notes:

1. Standard TLOF perimeter stripe of 12 in [30 cm]. See figure 4-25 for "H", touchdown position, overall length and weight limitation box dimensions.

Figure 4–22. Alternative Hospital Heliport Identification Symbols: Hospital

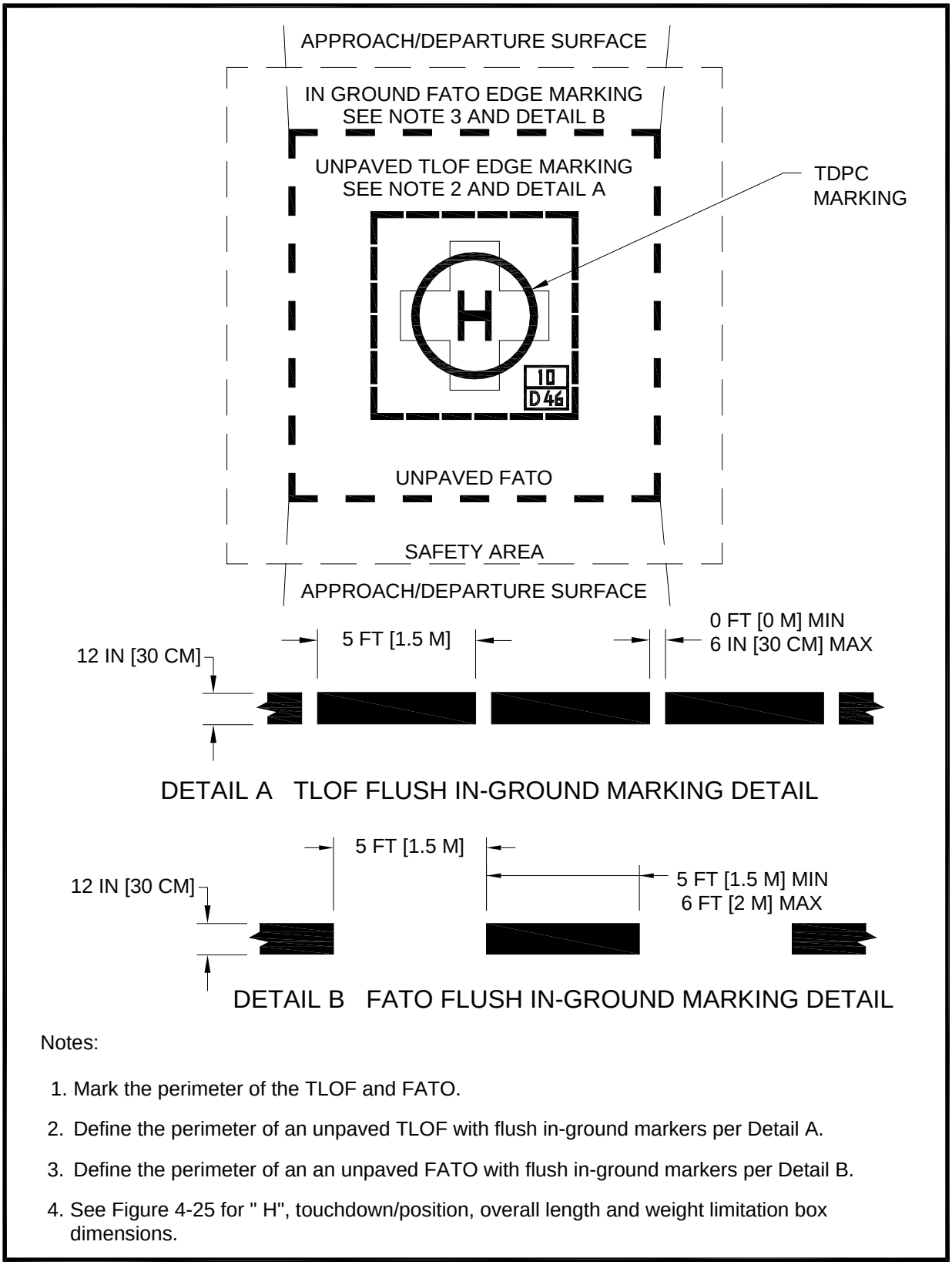


DETAIL A FATO MARKING DETAIL

Notes:

1. Mark the perimeter of the TLOF and the FATO.
2. Define the perimeter of a paved or hard surfaced TLOF with a continuous 12 in [30 cm] white line.
3. Define the perimeter of the FATO with a 12 in [30 cm] wide dashed line per Detail A.
4. See Figure 4-25 for " H", touchdown/position, Overall Length and Weight Limitation box dimensions.

Figure 4–23. Paved TLOF/Paved FATO – Paved TLOF/Unpaved FATO – Marking: Hospital



Notes:

1. Mark the perimeter of the TLOF and FATO.
2. Define the perimeter of an unpaved TLOF with flush in-ground markers per Detail A.
3. Define the perimeter of an an unpaved FATO with flush in-ground markers per Detail B.
4. See Figure 4-25 for " H", touchdown/position, overall length and weight limitation box dimensions.

Figure 4–24. Unpaved TLOF/Unpaved FATO – Marking: Hospital

(3) TLOF size and weight limitations. Mark the TLOF to indicate the length and weight of the largest helicopter it will accommodate, as shown in Figure 4–25. Place these markings in a box in the lower right-hand corner of the TLOF, or on the right-hand side of the "H" of a circular TLOF, when viewed from the preferred approach direction. The box is 5 feet (1.5 m) square. The numbers are 18" (46 cm) high. If necessary, interrupt the TDPC marking with this marking. (See Figure C–2.) The numbers are black with a white background. This marking is optional at a TLOF with a turf surface.

(a) TLOF size limitation. This number is the length (D) of the largest helicopter the TLOF will accommodate, as shown in Figure 4–25. The marking consists of the letter "D" followed by the dimension in feet. Do not use metric equivalents used for this purpose. Center this marking in the lower section of the TLOF size/weight limitation box.

(b) TLOF weight limitations. If a TLOF has limited weight-carrying capability, mark it with the maximum takeoff weight of the design helicopter, in units of thousands of pounds, as shown in Figure 4–25. Do not use metric equivalents for this purpose. Center this marking in the upper section of a TLOF size/weight limitation box. If the TLOF does not have a weight limit, add a diagonal line extending from the lower left hand corner to the upper right hand corner to the upper section of the TLOF size/weight limitation box.

c. Extended pavement/structure markings. As an option at hospital heliports, increase the pavement or structure without a corresponding increase in the length and width or diameter of the FATO to accommodate pedestrians and/or support operations. Whether or not this increased area is part of the LBA, mark the pavement or structure outside the TLOF with 12-inch-wide (30 cm) diagonal black and white stripes. See Figure 4–26 for marking details.

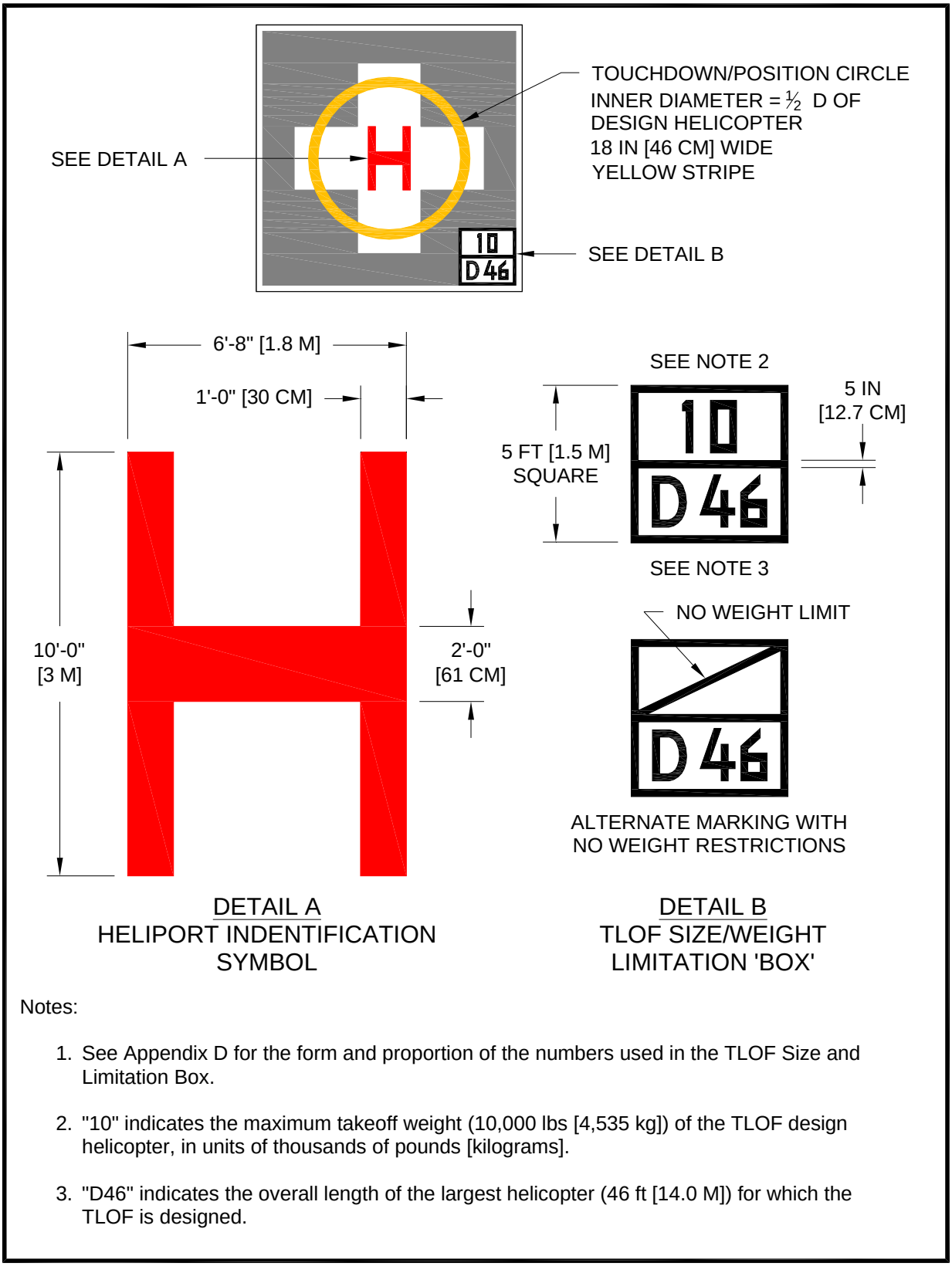
d. FATO markings.

(1) FATO perimeter marking. Define the perimeter of a load-bearing FATO with markers and/or lines. Do not mark the FATO perimeter if any portion of the FATO is not a load-bearing surface. In such cases, mark the TLOF perimeter (see paragraph 414.)

(a) Paved FATOs. Define the perimeter of a paved load-bearing FATO with a 12-inch-wide (30 cm) dashed white line. Use marking segments approximately 5 feet (1.5 m) in length, and with end-to-end spacing of approximately 5 feet (1.5 m) to define the corners of the FATO and the perimeter. See Figure 4–23.

(b) Unpaved FATOs. Define the perimeter of an unpaved load-bearing FATO with 12-inch-wide (30 cm), flush, in-ground markers. Use marking segments approximately 5 feet (1.5 m) in length, and with end-to-end spacing of approximately 5 feet (1.5 m) to define the corners of the FATO and the perimeter. See Figure 4–23 and Figure 4–24.

e. Flight path alignment guidance marking. An optional flight path alignment guidance marking consists of one or more arrows to indicate the preferred approach/departure direction(s). Place it on the TLOF, FATO and/or safety area surface as shown in Figure 4–10. The shaft of the arrow(s) is 18 inches (50 cm) in width and at least 10 feet (3 m) in length. When combined with a flight path alignment guidance lighting system described in paragraph 415, it takes the form shown in Figure 4–10, which includes scheme for marking the arrowheads. Use a color that provides good contrast against the background color of the surface on which they are marked. An arrow pointing toward the center of the TLOF depicts an approach direction. An arrow pointing away from the center of the TLOF depicts a departure direction. In the case of a flight path limited to a single approach direction or a single takeoff direction, the arrow marking is unidirectional. In the case of a heliport with only a bidirectional approach/takeoff flight path available, the arrow marking is bidirectional.



Notes:

1. See Appendix D for the form and proportion of the numbers used in the TLOF Size and Limitation Box.
2. "10" indicates the maximum takeoff weight (10,000 lbs [4,535 kg]) of the TLOF design helicopter, in units of thousands of pounds [kilograms].
3. "D46" indicates the overall length of the largest helicopter (46 ft [14.0 M]) for which the TLOF is designed.

Figure 4–25. TLOF Size and Weight Limitations: Hospital

Notes:

1. Extended pavement/structure markings begin flush with TLOF edge markings and end at the edge of the extended pavement/structure.

2. Extended pavement/structure markings are 12 in [30 cm] wide black and white stripes on a 45° angle.

Figure 4–26. Extended Pavement or Structure Marking: Hospital

f. Taxi route and taxiway markings.

(1) Paved taxiway markings. Mark the centerline of a paved taxiway with a continuous 6-inch (15 cm) yellow line. If necessary to increase conspicuity, mark both edges of the paved portion of the taxiway with two continuous 6- inch (15 cm) wide yellow lines spaced 6 inches (15 cm) apart. Figure 4–12 illustrates taxiway centerline and edge markings.

(2) Unpaved taxiway markings. Use either raised or in-ground flush edge markers to provide strong visual cues to pilots. Space them longitudinally at approximately 15-foot (5 m) intervals on straight segments and at approximately 10-foot (3 m) intervals on curved segments. Figure 4–13 and Figure 4–14 illustrate taxiway edge markings.

(a) Raised-edge markers are blue, 4 inches (10 cm) in diameter, and 10 inches (25 cm) high, as illustrated in Figure 4–13.

(b) In-ground, flush edge markers are yellow, 12 inches (30 cm) wide, and approximately 5 feet (1.5 m) long.

(3) Raised edge markers in grassy areas. Raised edge markers are sometimes obscured by tall grass. Address this issue with 12-inch (30 cm) diameter concrete pads or solid material disks around the poles supporting the raised markers.

(4) Taxiway to parking position transition requirements. For paved taxiways and parking areas, taxiway centerline markings continue into parking positions and become the parking position centerlines.

g. Parking position markings. If a hospital heliport has a parking position, the following standards apply.

(1) Paved parking position identifications. Mark parking position identifications (numbers or letters) if there is more than one parking position. These markings are yellow characters 36 inches (91 cm) high. See Figure 4–20 and Figure C–1.

(2) Rotor diameter circle. Define the circle of the RD of the largest helicopter that will park at that position with a 6-inch (15 cm) wide, solid yellow line with an outside diameter of RD. In paved areas, this is a painted line (See Figure 4–20). In unpaved areas, use a series of flush markers, 6 inches (15 cm) in width, a maximum of 5 feet (1.5 m) in length, and with end-to-end spacing of approximately 5 feet (1.5 m).

h. Touchdown/positioning circle (TDPC) marking. An optional TDPC marking provides guidance to allow a pilot to touch down in a specific position on paved surfaces. When the pilot's seat is over the marking, the undercarriage will be inside the LBA, and all parts of the helicopter will be clear of any obstacle by a safe margin. A TDPC marking is a yellow circle with an inner diameter of ½ D and a line width of 18 in (46 cm). Locate a TDPC marking in the center of a parking area. Use a TDPC marking for "turn-around" parking areas. See Figure 4–20 and Figure 4–18.

i. Maximum length marking. On paved surfaces, indicate the D of the largest helicopter that the position is designed to accommodate (for example, 40) with this marking. This marking consists of yellow characters at least 36 inches (91 cm) high. See Figure 4–20 and Figure C–1.

j. Parking position weight limit. If a paved parking position has a weight limitation, mark it in units of 1,000 lbs as illustrated in Figure 4–20. (A 4 indicates a weight-carrying capability of up to 4,000 lbs. Do not use metric equivalents for this purpose.) This marking consists of yellow characters 36 inches (91 cm) high. Place a bar under the number if necessary to minimize the possibility of being misread. See Figure 4–18 and Figure C–1.

k. Shoulder line markings. Use optional shoulder line markings for paved parking areas (See Figure 4–15) to ensure safe rotor clearance. Locate a 6-inch (15 cm) wide solid yellow shoulder line,

perpendicular to the centerline and extending to the RD marking, so it is under the pilot's shoulder such that the main rotor of the largest helicopter for which the position is designed will be entirely within the rotor diameter parking circle (See Figure 4–20.) Use 0.25 D from the center of parking area to define the location of shoulder line. Use a shoulder line marking for "taxi through" and "back-out" parking areas.

l. Walkways. Figure 4–20 illustrates one marking scheme.

m. Closed heliport. Obliterate all markings of a permanently closed heliport, FATO, or TLOF. If it is impractical to obliterate markings, place a yellow "X" over the "H", as illustrated in Figure 4–27. Use a yellow "X" large enough to ensure early pilot recognition that the heliport is closed. Remove the wind cone(s) and other visual indications of an active heliport.

n. Marking sizes. See Appendix C for guidance on the proportions of painted numbers.

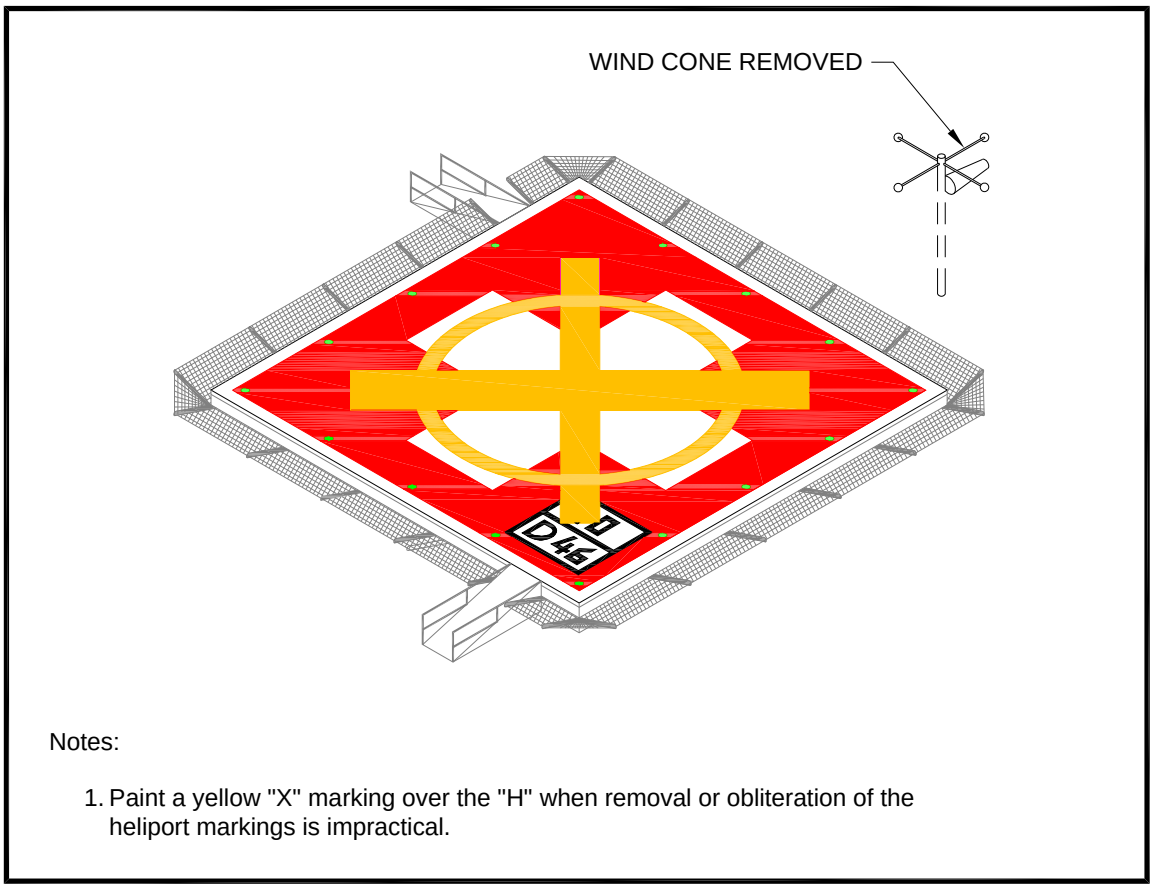


Figure 4–27. Marking a Closed Heliport: Hospital

415. Heliport lighting. If the heliport operator intends for the facility to support night operations, light the heliport with FATO and/or TLOF perimeter lights as described below. Design flush light fixtures and installation methods to support point loads of the design helicopter transmitted through a skid or wheel.

a. TLOF perimeter lights.

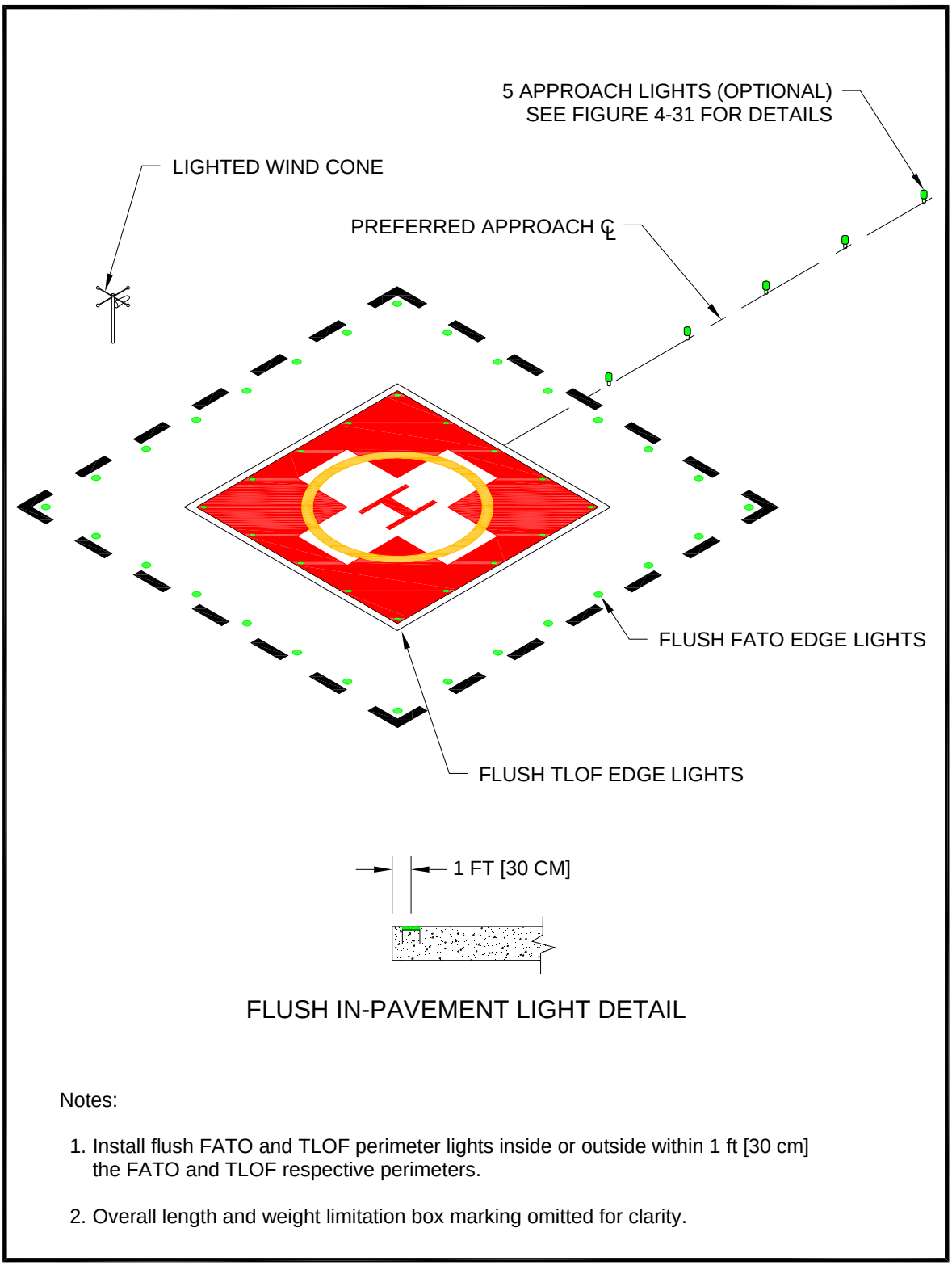
(1) Ground level TLOF. Use green lights meeting the requirements of FAA Airports Engineering Brief 87, Heliport Perimeter Light for Visual Meteorological Conditions (VMC), to define the TLOF perimeter. If only the TLOF is load bearing, use flush lights or, as a less desirable option, raised green omnidirectional lights. Use a minimum of three light fixtures per side of a square or rectangular TLOF. Locate a light at each corner, with additional lights uniformly spaced between the

corner lights. Using an odd number of lights on each side will place lights along the centerline of the approach. To define a circular TLOF, use an even number of lights, with a minimum of eight, uniformly spaced. Space the lights at a maximum of 25 feet (7.6 m). Locate flush lights within 1 foot (30 cm) (inside or outside) of the TLOF perimeter. Locate raised lights outside and within 10 feet (3 m) of the edge of the TLOF. Make sure raised lights do not penetrate a horizontal plane at the TLOF elevation by more than 2 inches (5 cm). Figure 4–28 and Figure 4–30 illustrate these lights.

(2) Elevated TLOF. As an option, use raised, omnidirectional lights meeting the requirements of EB 87, located on the outside edge of the TLOF or the outer of the safety net, as shown in Figure 4–29. Lighting on the outer edge of the safety net provides better visual cues to pilots at a distance from the heliport since it outlines a larger area. Make sure raised lights do not penetrate a horizontal plane at the TLOF elevation by more than 2 inches (5 cm).

b. Load-bearing FATO perimeter lights. Use green lights meeting the requirements of EB 87 to define the perimeter of a load bearing FATO. Do not light the FATO perimeter if any portion of the FATO is not a load-bearing surface. Use a minimum of three flush or raised light fixtures per side of a square or rectangular FATO. Locate a light is located at each corner, with additional lights uniformly spaced between the corner lights. Using an odd number of lights on each side will place lights along the centerline of the approach. To define a circular FATO, use an even number of lights, with a minimum of eight, uniformly spaced. Space lights at a maximum of 25 feet (7.6 m). Locate flush lights within 1 foot (30 cm) (inside or outside) of the FATO perimeter (see Figure 4–28 and Figure 4–30). As an option, use a rectangular light pattern even if the TLOF is circular. At a distance during nighttime operations, a square or rectangular pattern of FATO perimeter lights provides the pilot with better visual alignment cues than a circular pattern, but a circular pattern may be more effective in an urban environment. In the case of an elevated FATO with a safety net, mount the perimeter lights in a similar manner as discussed in paragraph 415. Make sure raised FATO perimeter lights are no more than 8 inches (20 cm) high, and locate them 10 feet (3 m) from the FATO perimeter.

c. Floodlights. The FAA has not evaluated floodlights for effectiveness in visual acquisition of a heliport. However, if ambient light does not adequately illuminate markings for night operations, use floodlights to illuminate the TLOF, the FATO, and/or the parking area. If possible, mount these floodlights on adjacent buildings to eliminate the need for tall poles. Take care, however, to place floodlights clear of the TLOF, the FATO, the safety area, and the approach/departure surfaces, and transitional surfaces. Ensure floodlights and their associated hardware do not constitute an obstruction hazard. Aim floodlights down to provide adequate illumination on the surface. Make sure floodlights that might interfere with pilot vision during takeoff and landings are capable of being turned off by pilot control or at pilot request.



Notes:

1. Install flush FATO and TLOF perimeter lights inside or outside within 1 ft [30 cm] the FATO and TLOF respective perimeters.

2. Overall length and weight limitation box marking omitted for clarity.

Figure 4–28. Flush TLOF/FATO Perimeter Lighting: Hospital

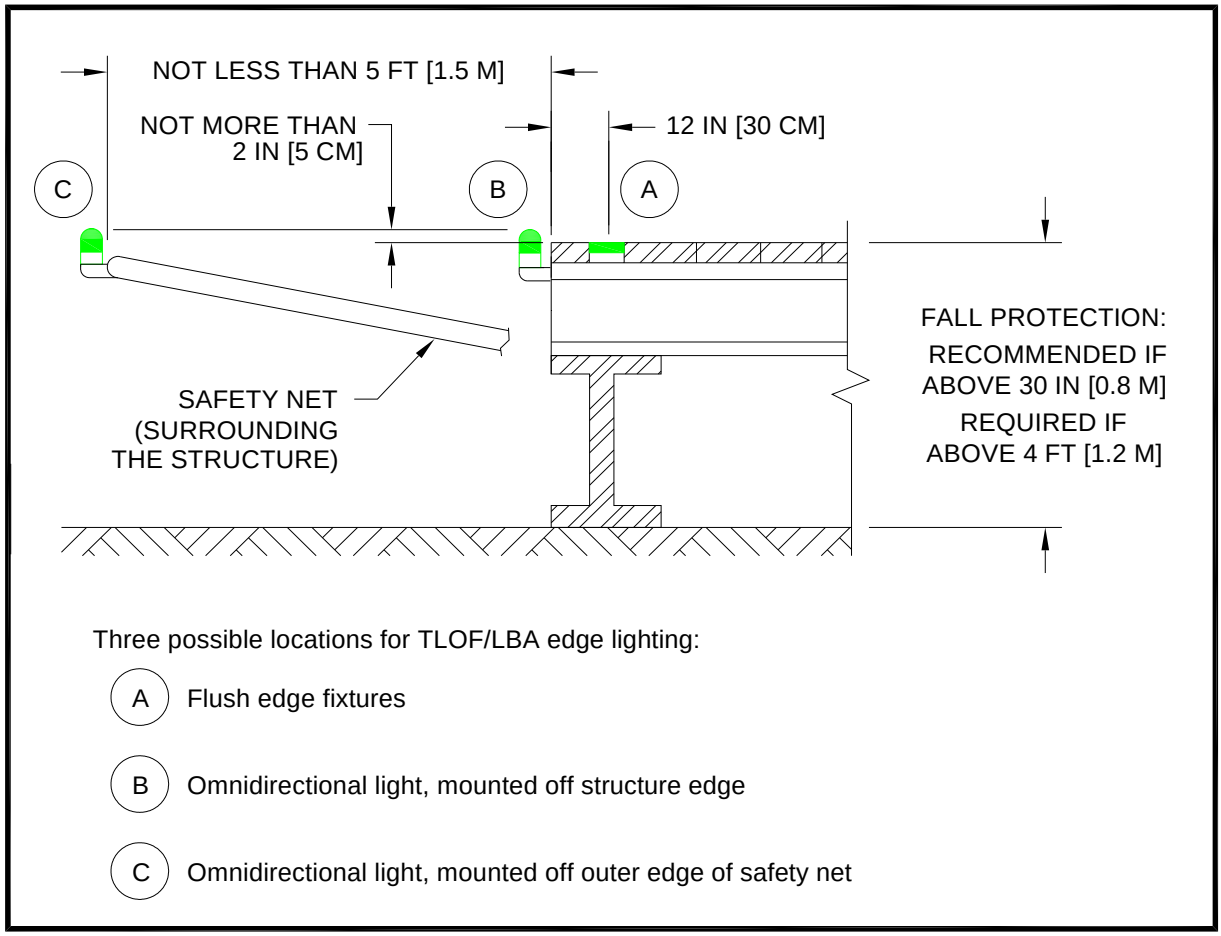
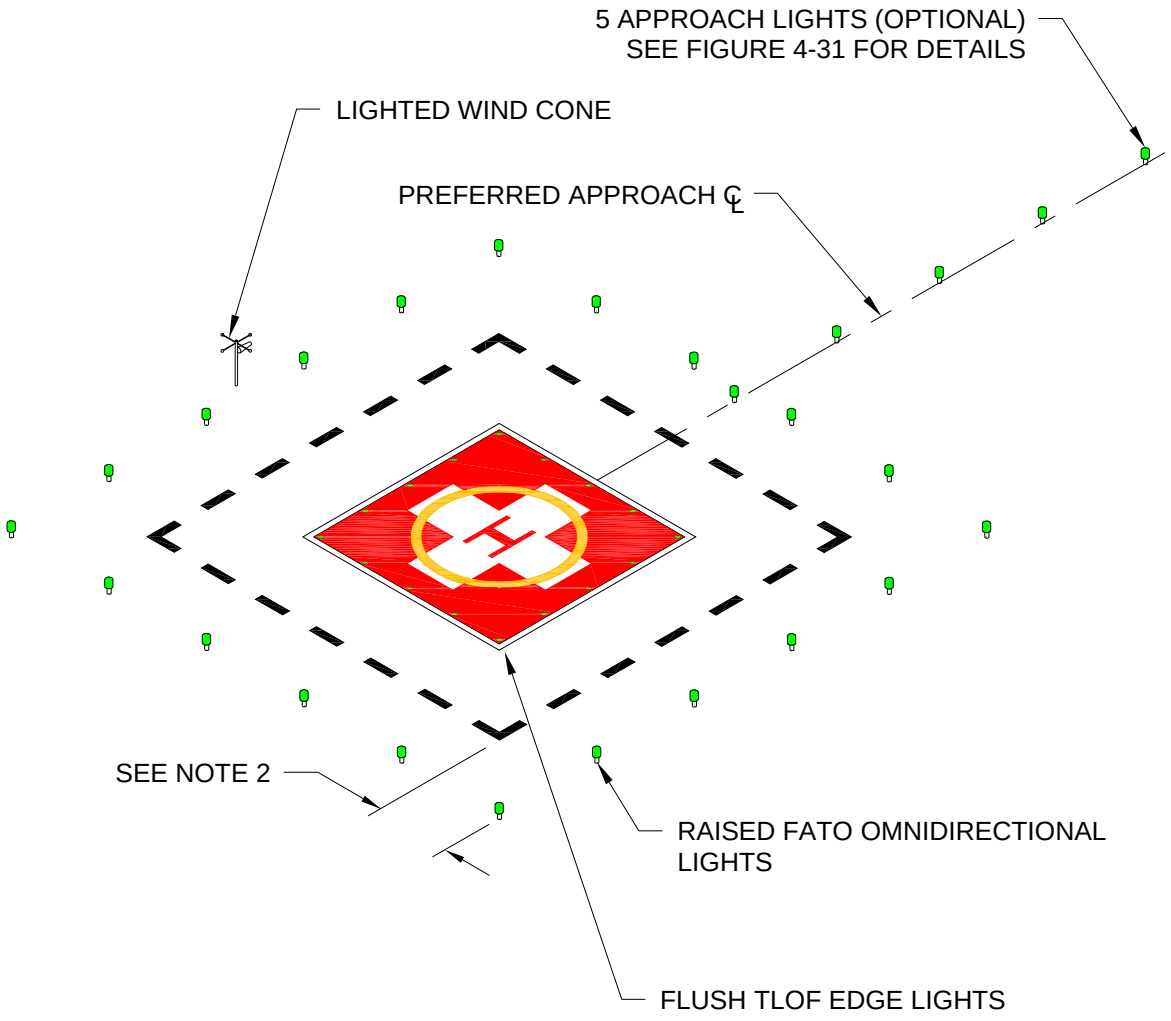


Figure 4–29. Elevated TLOF, Safety Net and Lighting Heliport Partial Elevation: Hospital



Notes:

1. Install flush TLOF perimeter lights inside or outside within 1 ft [30 cm] of the FATO and TLOF respective perimeters.

2. Install raised FATO lights 10 ft [3 m] outside the FATO perimeter.

3. Overall length and weight limitation box marking omitted for clarity.

Figure 4–30. Flush TLOF and Raised FATO Perimeter Lighting: Hospital

d. Landing direction lights. As an option when it is necessary to provide directional guidance, install landing direction lights. Landing direction lights are a configuration of five green omnidirectional lights meeting the standards of EB 87, on the centerline of the preferred approach/departure path. Space these lights at 15-foot (5 m) intervals beginning at a point not less than 20 feet (6 m) and not more than 60 feet (18 m) from the TLOF perimeter and extending outward in the direction of the preferred approach/departure path, as illustrated in Figure 4–31.

e. Flight path alignment lights. Flight path alignment lights meeting the requirements of EB 87 are optional. Place them in a straight line along the direction of approach and/or departure flight paths. If necessary, extend them across the TLOF, FATO, safety area or any suitable surface in the immediate vicinity of the FATO or safety area. Install three or more green lights spaced at 5 feet (1.5 m) to 10 feet (3.0 m). See Figure 4–10.

f. Taxiway and taxi route lighting.

(1) Taxiway centerline lights. Define taxiway centerlines with flush bidirectional green lights meeting the standards of AC 150/5345-46, Specification for Runway and Taxiway Light Fixtures, for type L-852A (straight segments) or L-852B (curved segments). Space these lights at maximum 50-foot (15 m) longitudinal intervals on straight segments and at maximum 25 foot (7.6 m) intervals on curved segments, with a minimum of four lights needed to define the curve. Uniformly offset taxiway centerline lights no more than two feet (0.6 m) if necessary to ease painting the taxiway centerline. As an option, use green retroreflective markers meeting requirements for Type I markers in AC 150/5345-39, Specification for L-853, Runway and Taxiway Retroreflective Markers in lieu of the L-852A or L-852B lighting fixtures.

(2) Taxiway edge lights. Use omnidirectional blue lights to light the edges of a taxiway. As an option, use blue retroreflective markers to identify the edges of the taxiway in lieu of lights. Make sure retroreflective markers are no more than 8 inches (20 cm) tall.

(a) Straight segments. Space lights at 50 feet (15.2 m) longitudinal intervals on straight segments.

(b) Curved segments. Curved taxiway edges require shorter spacing of edge lights. Determine the spacing based on the radius of the curve. The applicable spacing for curves is shown in AC 150/5340-30, Design and Installation Detail for Airport Visual Aids. Space the taxiway edge lights uniformly. Use at least three edge lights for curved edges of more than 30 degrees from point of tangency (PT) of the taxiway section to PT of the intersecting surface. For radii not listed in AC 150/5340-30, determine spacing by linear interpolation.

(c) Paved taxiways. Use flush lights meeting the standards of AC 150/5345-46 for type L-852T.

(d) Unpaved taxiways. Use raised lights meeting the standards of AC 150/5345-46 for type L-861T. Use a maximum lateral spacing for the lights or reflectors equal to the RD of the design helicopter, but not more than 35 feet (10.7 m).

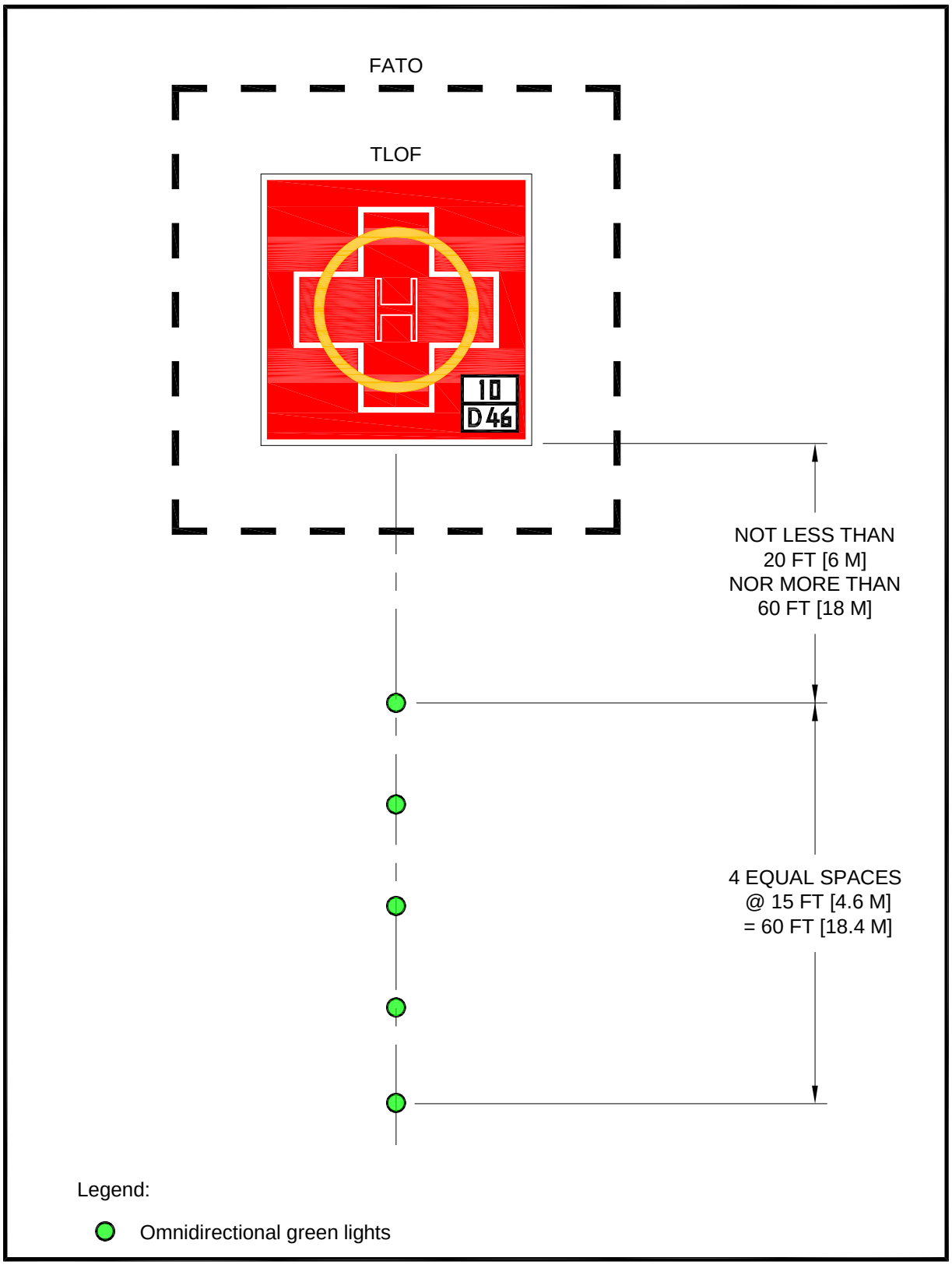


Figure 4–31. Landing Direction Lights: Hospital

g. Heliport identification beacon. A heliport identification beacon is optional equipment. It is the most effective means to aid the pilot in visually locating the heliport. Locate the beacon, flashing white/green/yellow at the rate of 30 to 45 flashes per minute, on or close to the heliport. Find guidance on heliport beacons in AC 150/5345-12, Specification for Airport and Heliport Beacon. As an option, allow the beacon to be pilot controllable, so it is "on" only when needed.

416. Marking and lighting of difficult-to-see objects. It is often difficult for pilot to see unmarked wires, antennas, poles, cell towers, and similar objects, even in the best daylight weather, in time to take evasive action. While pilots can avoid such objects during en route operations by flying well above them, approaches and departures require operations near the ground where obstacles may be a factor. This paragraph discusses the marking and lighting of objects near, but outside and below the approach/departure surface. Find guidance on marking and lighting objects in AC 70/7460-1, Obstruction Marking and Lighting.

a. Airspace. If difficult-to-see objects penetrate the object identification surfaces illustrated in Figure 4–32 and Figure 4–33, mark these objects to make them more conspicuous. If a heliport supports operations between dusk and dawn, light these difficult-to-see objects. Guidance on marking and lighting objects is contained in AC 70/7460-1. The object identification surfaces in Figure 4–32 and Figure 4–33 can also be described as follows:

(1) In all directions from the safety area, except under the approach/departure paths, the object identification surface starts at the safety area perimeter and extends out horizontally for a distance of 100 feet (30.5 m).

(2) Under the approach/departure surface, the object identification surface starts from the outside edge of the FATO and extends horizontally out along the approach path for a distance of 800 feet (244 m). From this point, the object identification surface extends out along the approach path for an additional distance of 3,200 feet (975 m) while rising on an 8:1 slope (8 units horizontal in 1 unit vertical). From the point 800 feet (244 m) from the FATO perimeter, the object identification surface is 100 feet (30.5 m) beneath the approach/departure surface.

(3) The width of the safety surface increases as a function of distance from the safety area. From the safety area perimeter, the object identification surface extends laterally to a point 100 feet (30.5 m) outside the safety area perimeter. At the upper end of the surface, the object identification surface extends laterally 200 feet (61 m) on either side of the approach/departure path.

b. Shielding of objects. Title 14 CFR part 77.9, Construction or alteration requiring notice, provides that if there are a number of objects close together, it may not be necessary to mark all of them if they are shielded. To meet the shielding guidelines part 77 requires that an object "be shielded by existing structures of a permanent and substantial nature or by natural terrain or topographic features of equal or greater height, and will be located in the congested area of a city, town, or settlement where the shielded structure will not adversely affect safety in air navigation."

c. Equipment/object marking. Make heliport maintenance and servicing equipment, as well as other objects used in the airside operational areas, conspicuous with paint, reflective paint, reflective tape, or other reflective markings. Find additional guidance in AC 150/5210-5, Painting, Marking, and Lighting of Vehicles Used on an Airport.

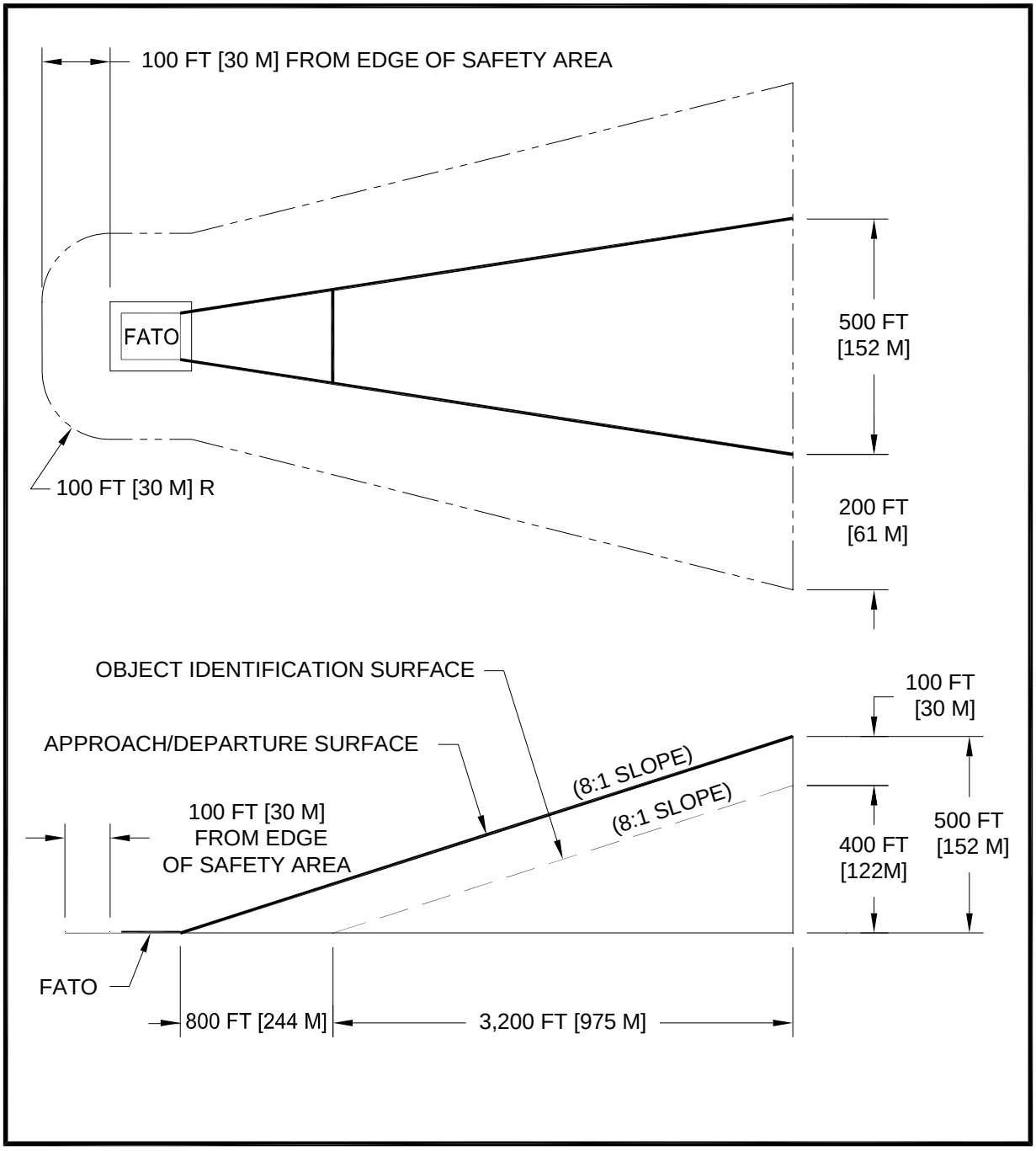


Figure 4–32. Airspace Where Marking and Lighting are Recommended: Hospital

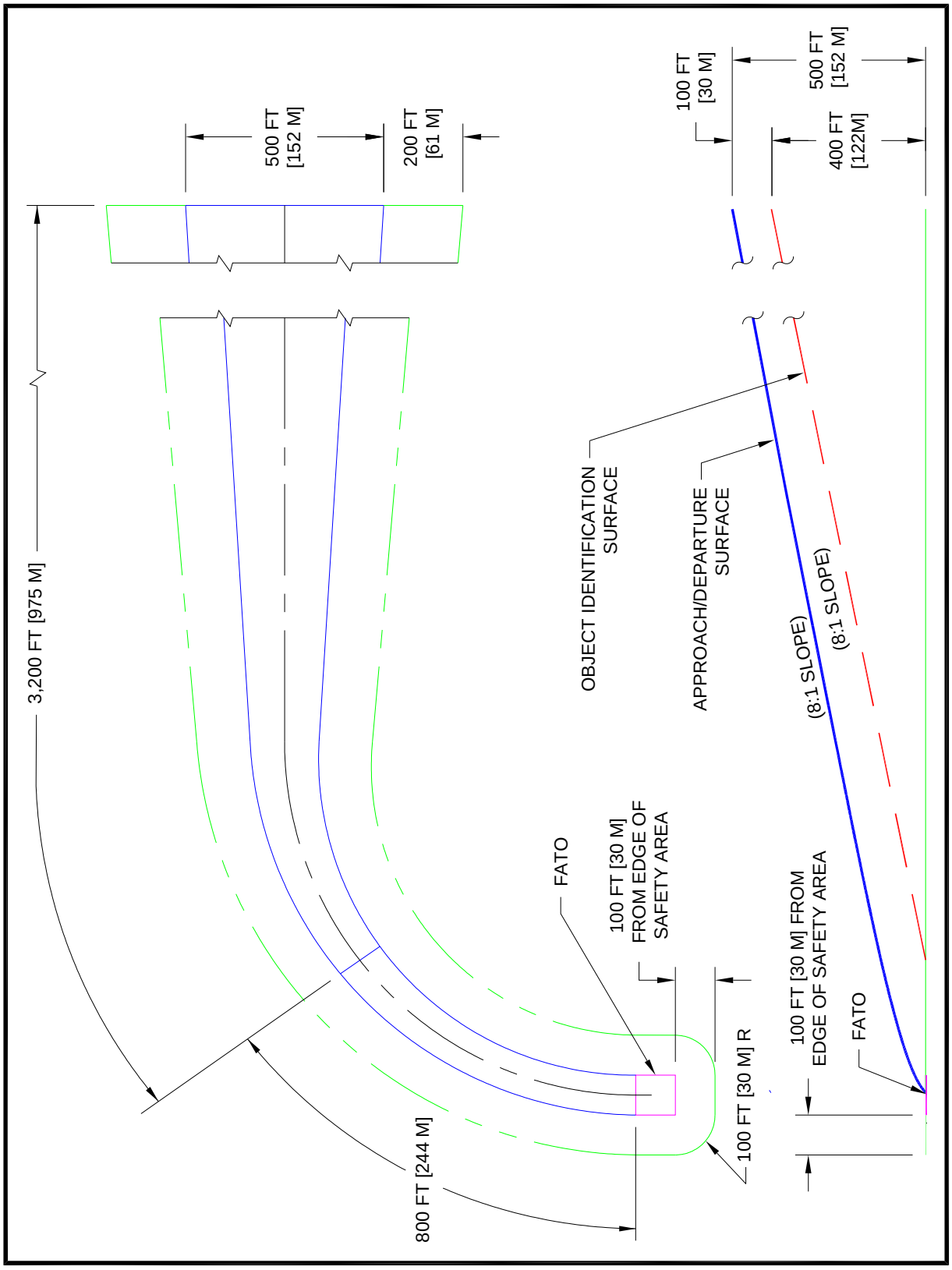


Figure 4–33. Airspace Where Marking and Lighting are Recommended: Curved Approach: Hospital

417. Safety considerations. Consider the safety enhancements discussed below in the design of a heliport. Address other areas such as the effects of rotor downwash based on site conditions and the design helicopter.

a. Security. Provide a means to keep the operational areas of a hospital heliport clear of people, animals, and vehicles. Use a method to control access depending upon the helicopter location and types of potential intruders.

(1) Safety barrier. At ground-level hospital heliports, erect a safety barrier around the helicopter operational areas in the form of a fence or a wall. Construct the barrier no closer to the operation areas than the outer perimeter of the safety area. Make sure the barrier does not penetrate any approach/departure (primary or transitional) surface. If necessary in the vicinity of the approach/departure paths, install the barrier well outside the outer perimeter of the safety area.

(2) Make sure any barrier is high enough to present a positive deterrent to persons inadvertently entering an operational area and yet low enough to be non-hazardous to helicopter operations.

(3) Access. Control access to airside areas in a manner commensurate with the barrier (for example, build fences with locked gates). Display a cautionary sign similar to that illustrated in Figure 4–34 on gates and doors. As an option at hospital heliport, secure operational areas via the use of security guards and a mixture of fixed and movable barriers.

b. Rescue and fire-fighting services. Heliports are subject to state and local rescue and fire-fighting regulations. Provide a fire hose cabinet or extinguisher at each access gate/door and each fueling location. Locate fire hose cabinets, fire extinguishers, and other fire-fighting equipment near, but below the level of, the TLOF. Find additional information in various NFPA publications. For more reference material, see Appendix D.

c. Communications. Use a Common Traffic Advisory Frequency (CTAF) radio to provide arriving helicopters with heliport and traffic advisory information but do not use this radio to control air traffic. Contact the Federal Communications Commission (FCC) for information on CTAF licensing.

d. Weather information. An automated weather observing system (AWOS) measures and automatically broadcasts current weather conditions at the heliport site. When installing an AWOS, locate it at least 100 feet (30 m) and not more than 700 feet (213 m) from the TLOF and such that its instruments will not be affected by rotor wash from helicopter operations. Find guidance on AWOS systems in AC 150/5220-16, Automated Weather Observing Systems (AWOS) for Non-Federal Applications, and FAA Order 6560.20, Siting Criteria for Automated Weather Observing Systems (AWOS). Other weather observing systems will have different siting criteria.

e. Winter operations. Swirling snow raised by a helicopter's rotor wash can cause the pilot to lose sight of the intended landing point and/or hide objects that need to be avoided. Design the heliport to accommodate the methods and equipment used for snow removal. Design the heliport to allow the snow to be removed sufficiently so it will not present an obstruction hazard to the tail rotor, main rotor, or undercarriage. Find guidance on winter operations in AC 150/5200-30, Airport Winter Safety and Operations.

Figure 4–34. Caution Sign: Hospital

418. Visual glideslope indicators (VGSI). A VGSI provides pilots with visual vertical course and descent cues. Install the VGSI such that the lowest on-course visual signal provides a minimum of 1 degree of clearance over any object that lies within 10 degrees of the approach course centerline.

a. Siting. The optimum location of a VGSI is on the extended centerline of the approach path at a distance that brings the helicopter to a hover with the undercarriage between 3 and 8 feet (0.9 to 2.5 m) above the TLOF. Figure 4–35 illustrates VGSI clearance criteria. To properly locate the VGSI, estimate the vertical distance from the undercarriage to the pilot's eye.

b. Control of the VGSI. As an option, allow the VGSI to be pilot controllable such that it is "on" only when required.

c. VGSI needed. A VGSI is an optional feature. However, provide a VGSI if one or more of the following conditions exist, especially at night:

(1) Obstacle clearance, noise abatement, or traffic control procedures require a particular slope to be flown.

(2) The environment of the heliport provides few visual surface cues.

d. Additional guidance. AC 150/5345-52, Generic Visual Glideslope Indicators (GVGI), and AC 150/5345-28, Precision Approach Path Indicator (PAPI) Systems, provide additional guidance.

419. Zoning and compatible land use. Where state and local statutes permit, the FAA encourages a hospital heliport operator to promote the adoption of the following zoning measures to ensure the heliport will continue to be available and to protect the investment in the facility.

a. Zoning to limit building/object heights. Find general guidance on drafting an ordinance that would limit building and object heights in AC 150/5190-4, A Model Zoning Ordinance to Limit Height of Objects Around Airports. Substitute the heliport surfaces for the airport surfaces in the model ordinance.

b. Zoning for compatible land use. The FAA encourages public agencies to enact zoning ordinances to control the use of property within the HPZ and the approach/departure path environment, restricting activities to those compatible with helicopter operations.

e. Air rights and property easements. Use air rights and property easements as options to prevent the encroachment of obstacles in the vicinity of a heliport.

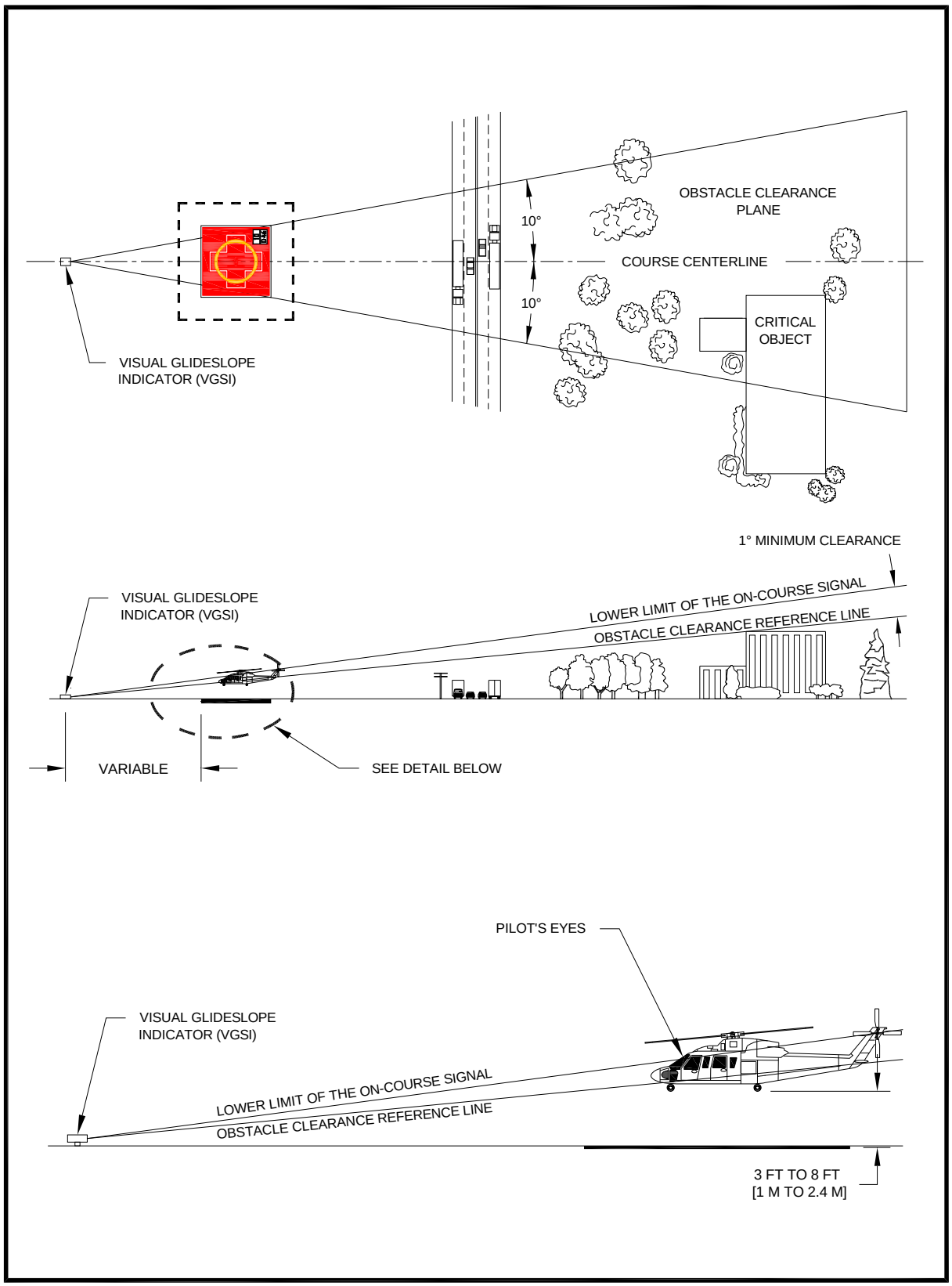


Figure 4–35. Visual Glideslope Indicator Siting and Clearance Criteria: Hospital

Chapter 5. Helicopter Facilities on Airports

501. General. Helicopters are able to operate on most airports without unduly interfering with airplane traffic. If necessary, provide separate facilities and approach/departure procedures when the volume of airplane and/or helicopter traffic affects operations. At airports with interconnecting passenger traffic, provide gates at the terminal for helicopter boarding. People who use a helicopter to go to an airport generally require convenient access to the airport terminal and the services provided to airplane passengers. Identify the location of the exclusive-use helicopter facilities, TLOFs, FATOs, safety areas, approach/departure paths, and helicopter taxi routes and taxiways on the airport layout plan (ALP). This chapter addresses design considerations for providing separate helicopter facilities on airports. Figure 5–1 shows an example of a heliport located on an airport. Other potential heliport locations are on the roofs of passenger terminals or parking garages serving passenger terminals.

502. Applicability. The standards in this chapter apply to projects funded under the Airport Improvement Program (AIP) or Passenger Facility Charge (PFC) program. For other projects/heliports, these standards are the FAA's recommendations for designing all heliports on airports. The design standards in this chapter assume there will never be more than one helicopter within the final approach and takeoff area (FATO) and the associated safety area. If there is a need for more than one touchdown and lift-off area (TLOF) at a heliport, locate each TLOF within its own FATO and within its own safety area. Unless otherwise noted, the standards in Chapter 2 apply to helicopter facilities serving general aviation operations and the standards in Chapter 3 apply to helicopter facilities serving transport operations.

503. Touchdown and liftoff area (TLOF). Locate the TLOF to provide ready access to the airport terminal or to the helicopter user's origin or destination.

504. Final approach and takeoff area (FATO). Table 5-1 provides standards for the distance between the centerline of an approach to a runway and the centerline of an approach to a FATO for simultaneous, same direction, VFR operations.

Table 5-1. Recommended Distance between FATO Center to Runway Centerline for VFR Operations

Airplane Size	Small Helicopter 7,000 lbs or less	Medium Helicopter 7,001 to 12,500 lbs	Large Helicopter over 12,500 lbs
Small Airplane 12,500 lbs or less	300 feet (91 m)	500 feet (152 m)	700 feet (213 m)
Large Airplane 12,500 lbs to 300,000 lbs	500 feet (152 m)	500 feet (152 m)	700 feet (213 m)
Heavy Airplane Over 300,000 lbs	700 feet (213 m)	700 feet (213 m)	700 feet (213 m)

505. Safety area. Apply the safety area dimensions and clearances described in Chapter 2 to facilities being developed on an airport for general aviation helicopter use. Apply safety area dimensions and clearances in Chapter 3 to facilities being developed on an airport for transport helicopter use.

506. VFR approach/departure paths. To the extent practical, design helicopter approach/departure paths to be independent of approaches to and departures from active runways.

507. Heliport protection zone (HPZ). Establish an HPZ where it is practicable for the airport owner to acquire and plan the land uses within the HPZ. Where this is not practicable, the HPZ standards have recommendation status for that portion of the HPZ the airport owner does not control.

508. Taxiways and taxi routes. When developing exclusive helicopter taxiways or taxi routes at an airport, locate them to minimize interaction with airplane operations.

509. Helicopter parking. Locate helicopter parking positions as close to the intended destination or origination of the passengers as conditions and safety permit.

510. Security. Unless screening was carried out at the helicopter passengers' departure location, Transportation Security Administration regulations may require that a screening area and/or screening be provided before passengers enter the airport's secured areas. If necessary, establish multiple helicopter parking positions and/or locations in the terminal area to service helicopter passenger screening and/or cargo interconnecting needs. Find information about passenger at the Transportation Security Administration web site http://www.tsa.gov/public/.

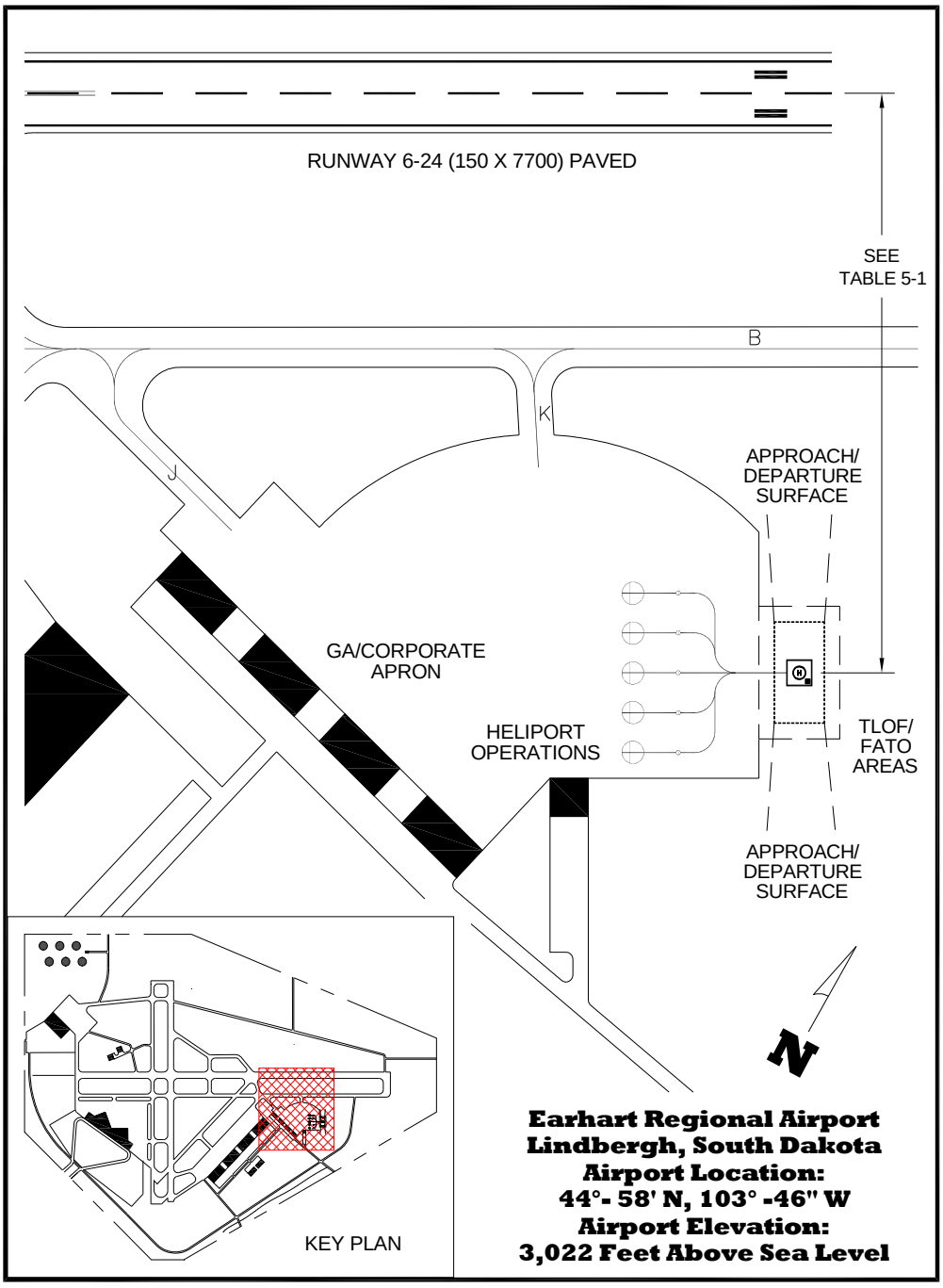


Figure 5–1. Heliport Located on an Airport: On Airport

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Chapter 6. Instrument Operations

601. General. Instrument approach/departure/missed approach procedures permit helicopter operations to continue during periods of low cloud ceilings and reduced visibility. The FAA establishes Instrument approach procedures in accordance with FAA 8260 series Orders published by FAA Flight Procedures Standards Branch. When a heliport does not meet the criteria of this AC, or FAA 8260 Series Orders, the FAA publishes the helicopter instrument approach procedure as a SPECIAL procedure, with annotations that special aircrew qualifications, pilot training and aircraft equipment are required to fly the specific procedure(s).

602. Planning. This chapter addresses issues that heliport owners consider before requesting the development of instrument approach/departure/missed approach procedures. The standards and recommendations in this AC are not intended to be sufficient to design an instrument procedure. Initiate early contact with the appropriate FAA Flight Standards Office to establish instrument procedures.

603. Airspace. Those who design instrument approach/departure/missed approach procedures have some flexibility in the design of such procedures. For this and other reasons, the airspace required to support helicopter instrument approach/departure operations is complex, and it does not lend itself to simple descriptions, even using figures. Refer to the latest revision of FAA 8260-series orders for more detailed information on criteria for developing helicopter instrument approach/departure/missed approach procedures.

604. Final approach reference area (FARA). For precision instrument procedures only, a certificated helicopter precision approach procedure terminates with the helicopter coming to a hover or touching down within a 150-foot-wide (45 m) by at least 150-foot long (45 m) FARA. The FARA is located at the far end of a 300-foot-wide by 1,225-foot- long (91 m by 373 m) FATO required for a precision instrument procedure. For the purposes of requirements for LBA and lighting, substitute the FARA for the FATO. Figure 6–1 illustrates the FARA/FATO relationship.

605. Improved lighting system. Installing the lighting systems described below may result in lower visibility minimums. See Figure 6–2 and Figure 6–3.

a. FATO perimeter lighting enhancement. Insert an additional raised, green light meeting the standards of FAA Airports Engineering Brief 87, Heliport Perimeter Light for Visual Meteorological Conditions (VMC), between each light in the front and rear rows of the raised perimeter lights to enhance the definition of the FATO.

b. Heliport instrument lighting system. The HILS consists of 24 unidirectional PAR 56, 200-watt white lights that extend the FATO perimeter lights. The system extends both the right and left edge lights as “edge bars” and both the front and rear edge lights as “wing bars,” as shown in Figure 6–2.

(1) Edge bars. Place edge bar lights at 50-foot (15.2 m) intervals, measured from the front and rear row of the FATO perimeter lights.

(2) Wing bars. Space wing bar lights at 15-foot (4.57 m) intervals, measured from the line of FATO perimeter (side) lights.

(3) Optional TLOF lights. A line of seven white flush lights meeting the standards of EB 87 is optional. Space them at 5-foot (1.5 m) intervals in the TLOF pavement. Align these lights on the centerline of the approach course to provide close-in directional guidance and improve TLOF surface definition. These lights are illustrated in Figure 6–2.

c. Heliport approach lighting System (HALS). The HALS, depicted in Figure 6–3 is a distinctive approach lighting configuration designed to prevent it from being mistaken for an airport runway approach lighting system.

606. Obstacle evaluation surfaces. The instrument procedure developer considers the specific heliport location, its physical characteristics, the terrain, surrounding obstructions, and so on, in designing the helicopter instrument approach procedure. Upon development of the instrument procedure, protect its underlying obstacle evaluation surfaces from penetrations. See paragraph 221. Also see paragraphs 201.e, 301.e, and 401.e.

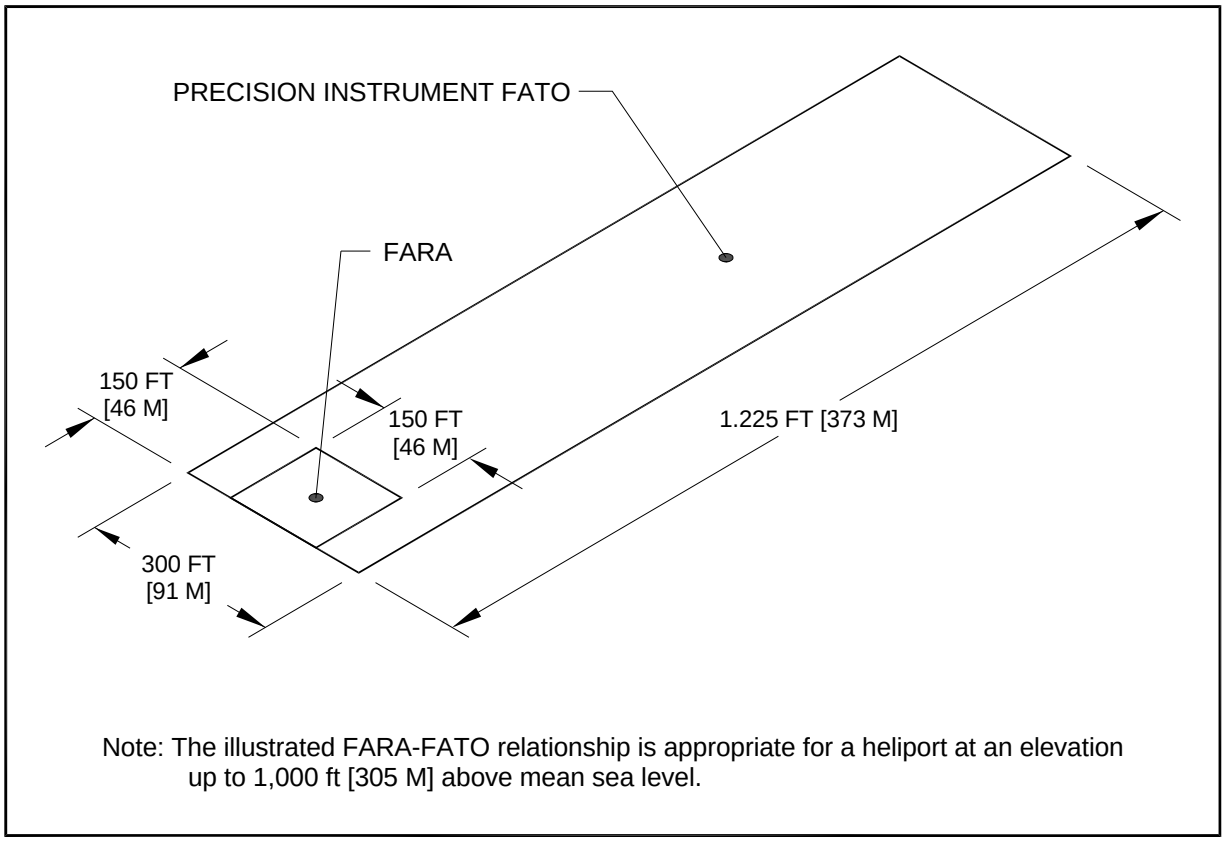

Figure 6–1. FARA/FATO Relationship: Precision

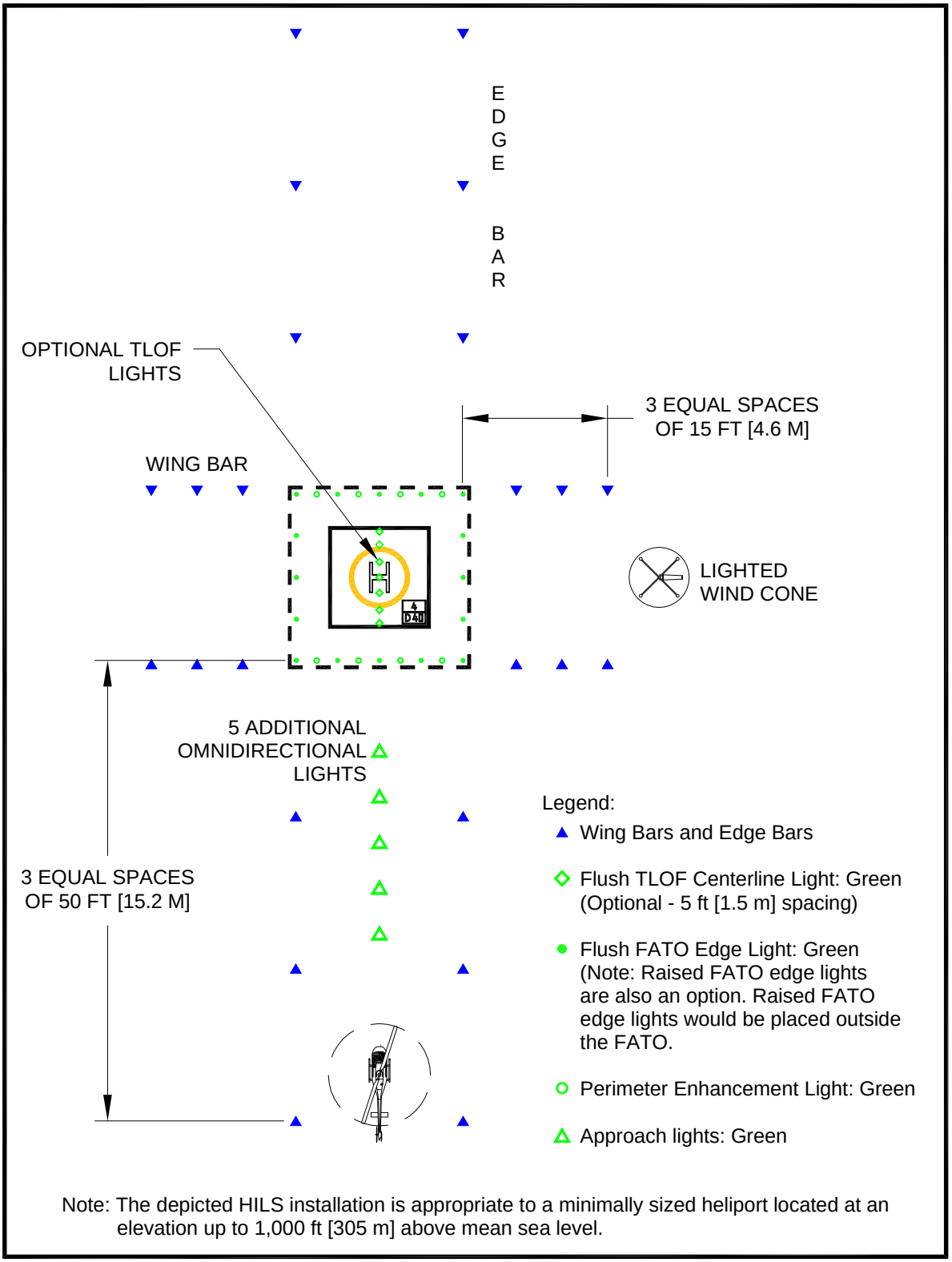

Figure 6–2. Heliport Instrument Lighting System (HILS): Non-precision

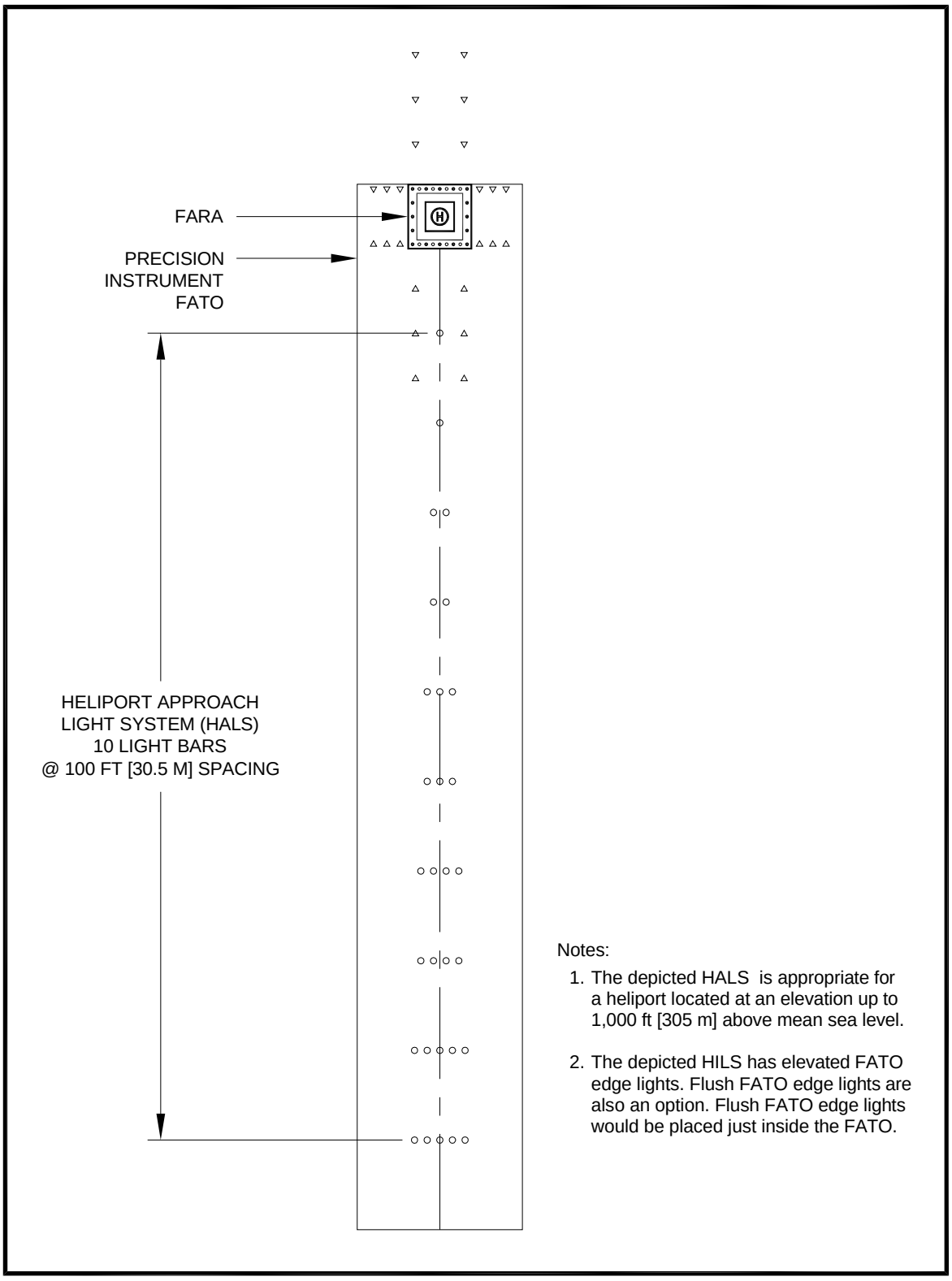

Figure 6–3. Heliport Approach Lighting System

Chapter 7. Heliport Gradients and Pavement Design

701. General. This chapter provides guidance on designing heliport pavements, including design loads, and addresses soil stabilization as a method of treating non paved operational surfaces. Provide a present a reasonably smooth, uniformly graded surface for operational surfaces such as the TLOF, FATO, safety areas, parking areas, taxi routes, and taxiways. Design the surfaces of a heliport to provide positive drainage.

702. TLOF gradients.

a. General aviation heliport. To ensure drainage, design the TLOF to have a gradient between 0.5 percent and 2 percent.

b. Transport heliport. To ensure drainage, design the TLOF to have a longitudinal gradient between 0.5 and 1 percent and a transverse gradient between 0.5 and 1.5 percent.

c. Hospital heliport. To ensure drainage, design the TLOF to have a gradient between 0.5 and 1 percent and 2 percent.

703. FATO gradients.

a. Load bearing FATO. Design a load bearing FATO to have a gradient between 0.5 percent and 5 percent. Design the gradient to be not more than 2 percent in any areas where a helicopter is expected to land. To ensure TLOF drainage, design gradients of rapid runoff shoulders to be between 3 and 5 percent. These standards are illustrated in Figure 7–1 below for a concrete TLOF and stabilized turf FATO.

b. Non-load bearing FATO. When the FATO is non-load bearing and/or not intended for use by the helicopter, there are no specific requirements for the gradient of the surface. In this case, design the gradient to be 5 percent or more to ensure adequate drainage away from the area of the TLOF. However, stabilize non-load bearing surfaces. See paragraph 707.

704. Safety area gradients. Design the surface of the safety area to be no steeper than a downward slope of 2:1 (2 units horizontal in 1 unit vertical). In addition, make sure the surface of the safety area is not higher than the FATO edge.

705. Parking area gradients. Design all helicopter parking area grades to not exceed 2 percent.

706. Taxiway and taxi route gradients. Design taxiway longitudinal gradients to not exceed 2 percent. Design transverse gradients to be between 0.5 percent and 2 percent.

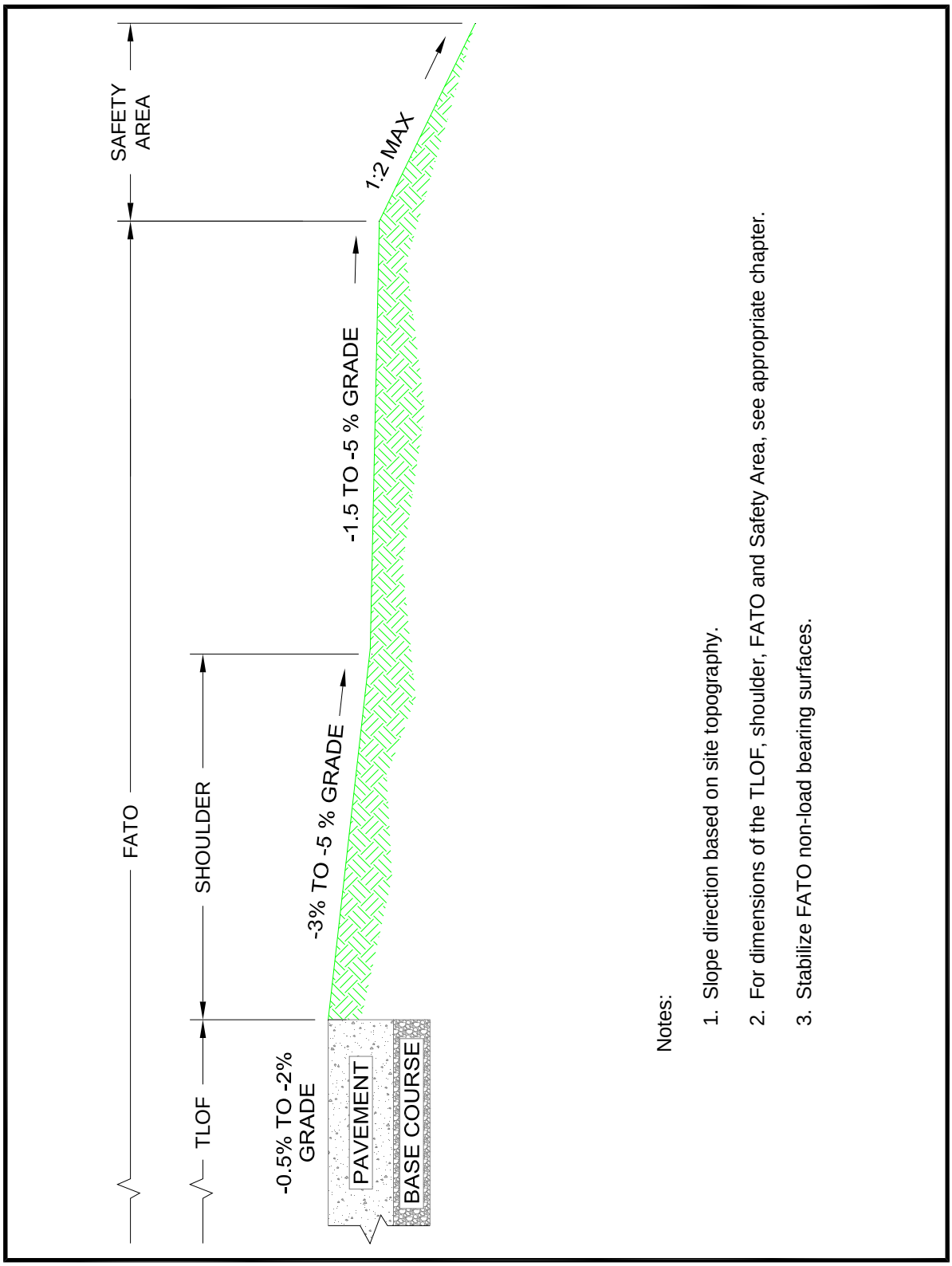

Figure 7–1. Heliport Grades and Rapid Runoff Shoulder: Gradients and Pavement

707. Design loads. Design and construct the TLOF and any load-bearing surfaces to support the weight of the design helicopter and any ground support vehicles. Loads are applied through the contact area of the tires for wheel-equipped helicopters or the contact area of the skid for skid equipped helicopters. Find lists of Helicopter weights, landing gear configurations, and dimensional data in Appendix B.

a. Static loads. For design purposes, the design static load is equal to the helicopter's maximum takeoff weight applied through the total contact area of the wheels or skids. Contact manufacturers to obtain the contact area for the specific helicopters of interest.

b. Dynamic loads. A dynamic load of 0.2 second or less duration may occur during a hard landing. For design purposes, assume dynamic loads at 150 percent of the takeoff weight of the design helicopter. When specific loading data is not available, assume 75 percent of the weight of the design helicopter to be applied equally through the contact area of the rear two rear wheels (or the pair rear wheels of a dual-wheel configuration) of a wheel-equipped helicopter. For a skid equipped helicopter assume 75 percent of the weight of the design helicopter to be applied equally through the aft contact areas of the two skids of a skid-equipped helicopter. (See Figure 7–2.) Contact manufacturers to obtain the aft contact area for specific helicopters of interest.

c. Rotor loads. Rotor downwash loads are approximately equal to the weight of the helicopter distributed uniformly over the disk area of the rotor. Tests have established that rotor downwash loads are generally less than the loads specified in building codes for snow, rain, or wind loads typically used in structural design calculations.

708. Pavement design and soil stabilization. Pavements distribute helicopters' weight over a larger area of the subsurface as well as provide a water-impervious, skid-resistant wearing surface. Pave TLOFs, FATOs, taxiways, and parking aprons to improve their load carrying ability, minimize the erosive effects of rotor wash, and facilitate surface runoff. Stabilize unpaved portions of the FATO and taxi routes subjected to rotor wash. In some instances, loads imposed by ground support vehicles may exceed those of the largest helicopter expected to use the facility. Find guidance on pavement design and on stabilizing soils in AC 150/5320-6, Airport Pavement Design and Evaluation, and AC 150/5370-10, Standards for Specifying Construction of Airports. These ACs are available at the Airports web site (http://www.faa.gov/airports).

a. Pavements. In most instances, a 6-inch thick (15 cm) portland cement concrete (PCC) pavement is capable of supporting operations by helicopters weighing up to 20,000 pounds (9,070 kg). Use thicker pavements for heavier helicopters or where the quality of the subsurface soil is questionable. If feasible, use PCC pavement for all surfaces used by helicopters.

b. Stabilizing soils. Use appropriate methods of soil stabilization to meet different site requirements. Consider helicopter weight, ground support vehicle weight, operational frequency, soil analysis, and climatic conditions in selecting the method(s) and extent of surface stabilization.

(1) Turf. A well-drained and well-established turf that presents a smooth, dense surface is usually the most cost-effective surface stabilization available. In some combinations of climates and weather conditions, turf surfaces are capable of supporting the weight of many of the smaller helicopters for low frequency use by private and corporate operators during much of the year. Turf surfaces also provide reasonable protection against wind, rotor wash, or water erosion. Climatic and soil conditions dictate the appropriate grass species to use at the site. Find guidance on turf establishment in AC 150/5370-10.

(2) Aggregate turf. Where heliports are located on soils that have poor load-carrying capabilities when wet, consider overcoming this deficiency by mixing selected granular materials into the upper 12 inches (30 cm) of the soil. Suitable granular materials for this purpose are crushed stone, pit-run

gravel, coarse sand, or oyster shells. Use a sufficient ratio of aggregate to soil to improve the stability of the soil yet retain the soil's ability to support grass. For additional guidance, see Item 217 of AC 150/5370-10.

c. Formed masonry shapes. Precast masonry shapes vary in size and shape-from a brick paver to an open block. Lay pavers on a prepared bed to present a solid surface. Embed precast blocks in the soil with grass growing in the natural openings. Architectural catalogs identify different masonry shapes that are commercially available for this purpose.

d. Pierced metal panels. Lay perforated metal panels that allow grass to grow through the openings on the ground to provide a hard surface for helicopter operations. Engineering catalogs identify commercially available panels.

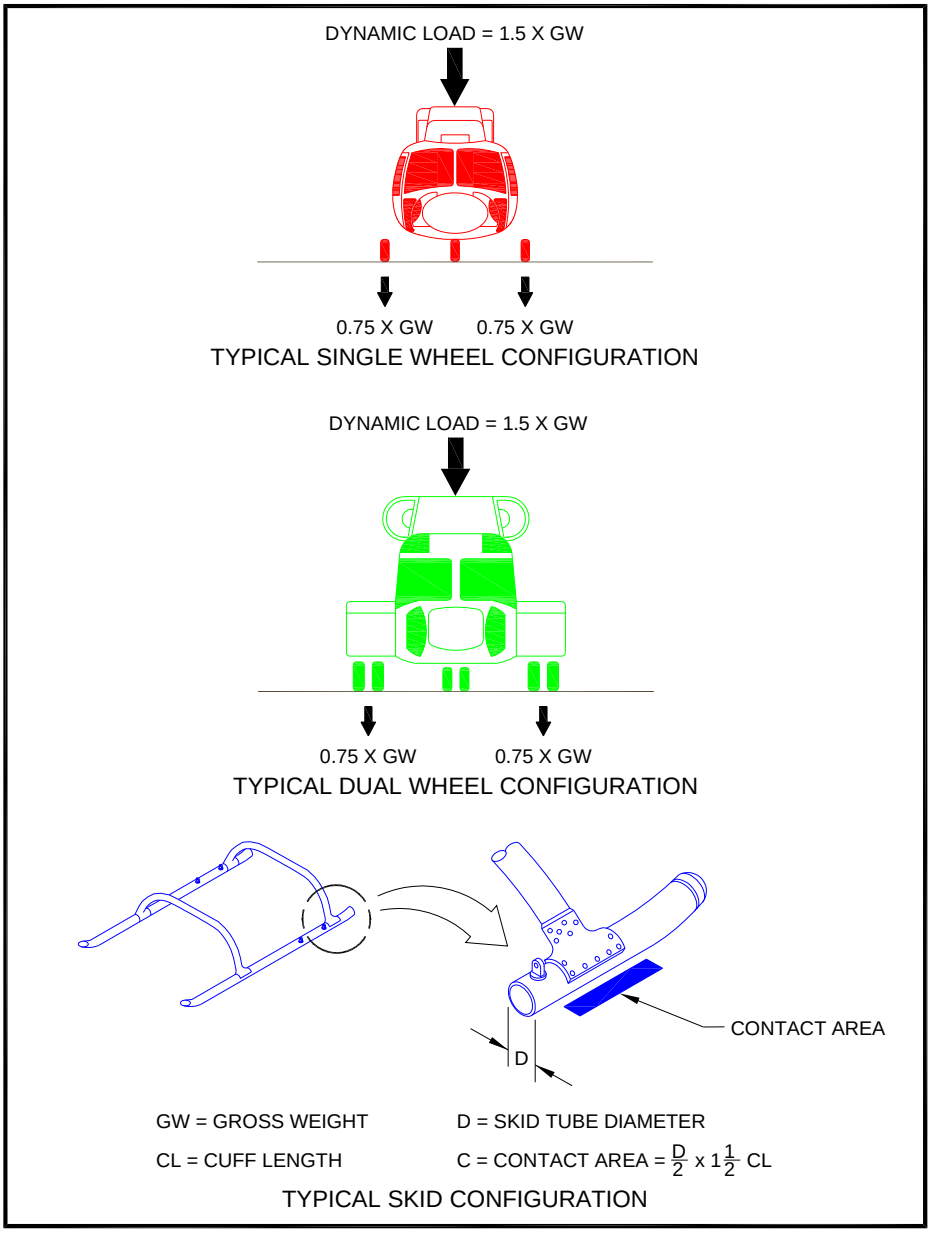

Figure 7–2. Helicopter Landing Gear Loading: Gradients and Pavement

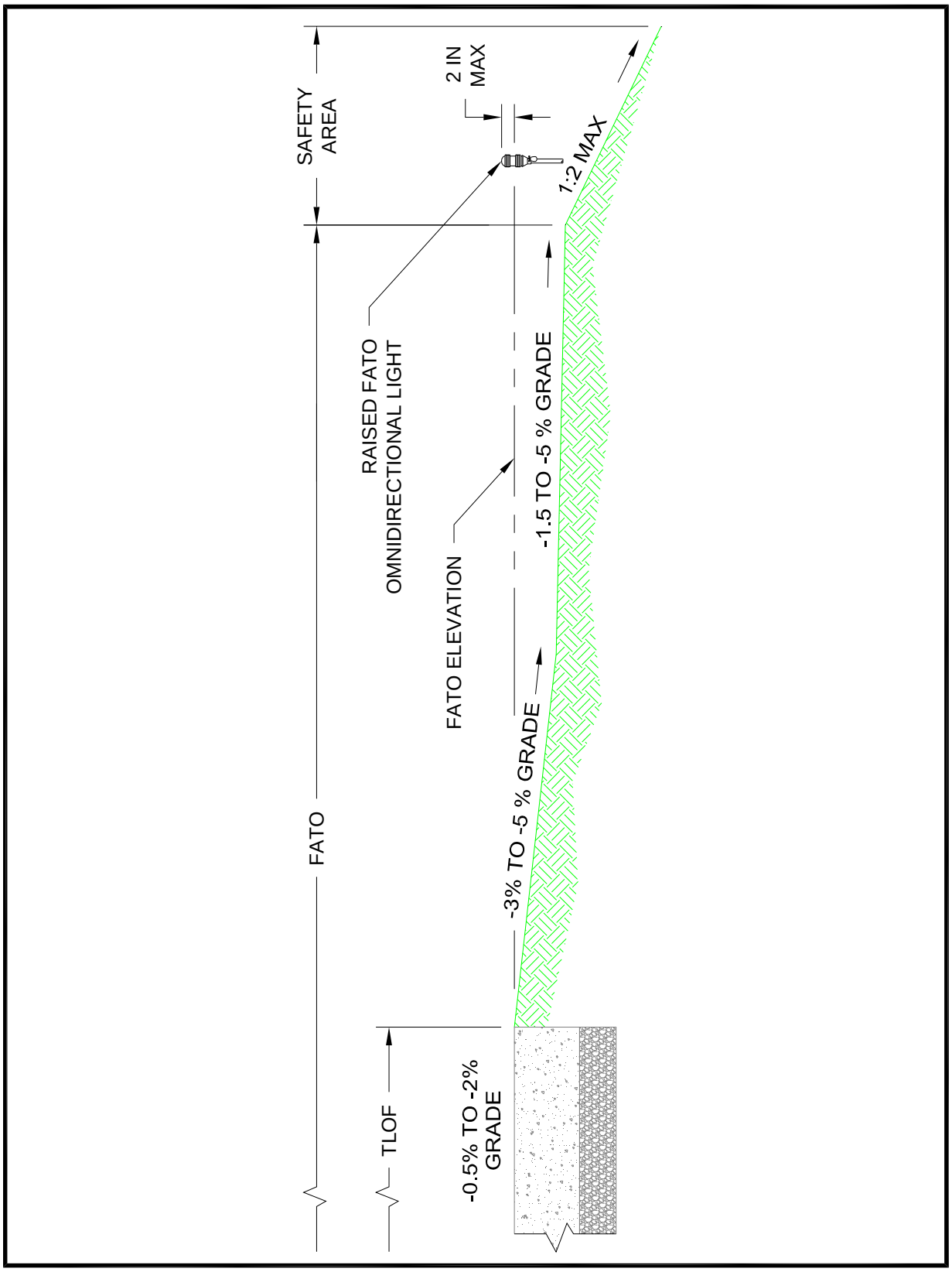

Figure 7–3. FATO Elevation

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Appendix A. Emergency Helicopter Landing Facilities (EHLF)

A-1. General. Preplanning emergency landing areas will result in safer and more effective air-support operations. These facilities comprise rooftop emergency facilities and medical emergency sites. Use the following as a guide for developing emergency helicopter landing facilities (EHLF).

A-2. Notification and coordination. In addition to any requirements to provide notice under part 157, advise the local Terminal Approach Radar Control or the local Air Traffic Control facility manager in writing of the EHLF.

A-3. Rooftop emergency facilities. Review local building codes to determine if they require structures over a specified height to provide a clear area on the roof capable of accommodating a helicopter to facilitate fire fighting or emergency evacuation operations.

a. Building code requirements. State and local building code requirements apply to rooftop facilities. Develop the landing surface to the local fire department requirements based on the size and weight of the helicopter(s) expected to engage in fire or rescue operations (see Figure A-1). Find additional information in various National Fire Protection Association (NFPA) publications. For more reference material, see Appendix D.

b. TLOF.

(1) Size. Design the TLOF to be square, rectangular or circular in configuration and centered within the EHLF. Design the length and width or diameter to be at least 40 feet (12.2 m)

(2) Weight capacity. Design the TLOF to accept a 13,500-pound gross weight (GW) helicopter plus an impact load of 1.5 times GW.

(3) Access. Provide two pedestrian access points to the TLOF at least 90 degrees apart with a minimum of 60 feet (18 m) TLOF perimeter separation.

(4) Drainage. Design the surface so drainage flows away from pedestrian access points, with a maximum slope of 1.5 percent.

c. FATO. Design the FATO to be at the same level as the TLOF.

(1) Size. Design the FATO to extend a distance of at least 45 feet (13.7 m) in all directions from the center of the EHLF. For safe operation, provide clearance of one third of the rotor diameter (RD) of the largest helicopter expected but not less than 20 feet (6.1 m)between the helicopter's main and tail rotor blades and any object that could be struck by these blades.

(2) Obstructions. As an option, design the FATO to be an imaginary surface outside the TLOF and extending beyond the structure edge. Design the FATO to be unobstructed and without penetration of obstacles such as parapets, window washing equipment, penthouses, handrails, antennas, vents, etc.

d. Safety area. Provide a clear, unobstructed area, a minimum of 12 feet (3.7 m) wide, on all sides, outside and adjacent to the FATO.

e. Safety net. If the platform is elevated 4 feet (1.2 m) or more above its surroundings, Title 29 CFR Part 1910.23 Guarding Floor and Wall Openings and Holes, requires the provision of fall protection. The FAA recommends such protection for all platforms elevated 30 inches (76 cm) or more. However, do not use permanent railings or fences, since they would be safety hazards during helicopter operations. As an option, install a safety net, meeting state and local regulations but not less than 5 feet (1.5 m) wide. Design the safety net to have a load carrying capability of 25 lbs/sq ft (122 kg/sq m). Make sure the net does not project above the level of the TLOF. Fasten both the inside and outside edges of the safety net to a solid structure. Construct nets of materials that are resistant to environmental effects.

f. Markings.

(1) TLOF perimeter. Define the limits of the touchdown pad with a solid 12-inch (30 cm) wide red or orange line as illustrated in Figure A-1.

(2) Touchdown/positioning circle (TDPC) marking. Center a 12-inch wide red or orange circular marking, 30 feet (9.1 m) in diameter, within the TLOF. Use a contrasting color for the background within the circle.

(3) Weight capacity. Mark the TLOF with the maximum takeoff weight of the design helicopter, in units of thousands of pounds (for example, a number "9," indicating 9,000 lbs GW), with each numeral ten feet in length, centered within the TLOF.

(4) Markings for pedestrians. Clearly mark rooftop access paths, EHLF access paths, and assembly zone(s) with surface paint and instructional signage.

g. Access.

(1) Stairs. Provide a minimum of two rooftop access stairs, with no less than 150 degrees separation, connecting to the top floor of the structure, with at least one providing access to the structure's emergency staircase.

(2) Doors. Keep penthouse and stairwell rooftop access doors unlocked at all times to provide access to the EHLF. As an option, equip doors with "panic bar" hardware and/or alarm them.

h. Wind cone. Locate a wind cone assembly with an orange wind cone within the line of sight from the EHLF and outside the approach/departure path(s).

i. Lighting. Shield ambient rooftop lighting to avoid affecting the pilot's vision.

A-4. Medical emergency sites. Medical emergency sites are clear and level areas near the scene of an accident or incident that the local emergency response team designates as the place where the helicopter air ambulance is directed to land in order to transport an injured person to a hospital. Provide such sites in various locations within a jurisdiction to support fast response to medical emergencies and accidents. Pre-designating medical emergency sites provides the opportunity to inspect potential sites in advance and to select sites that have adequate clear approach/departure airspace and adequate clear ground space.

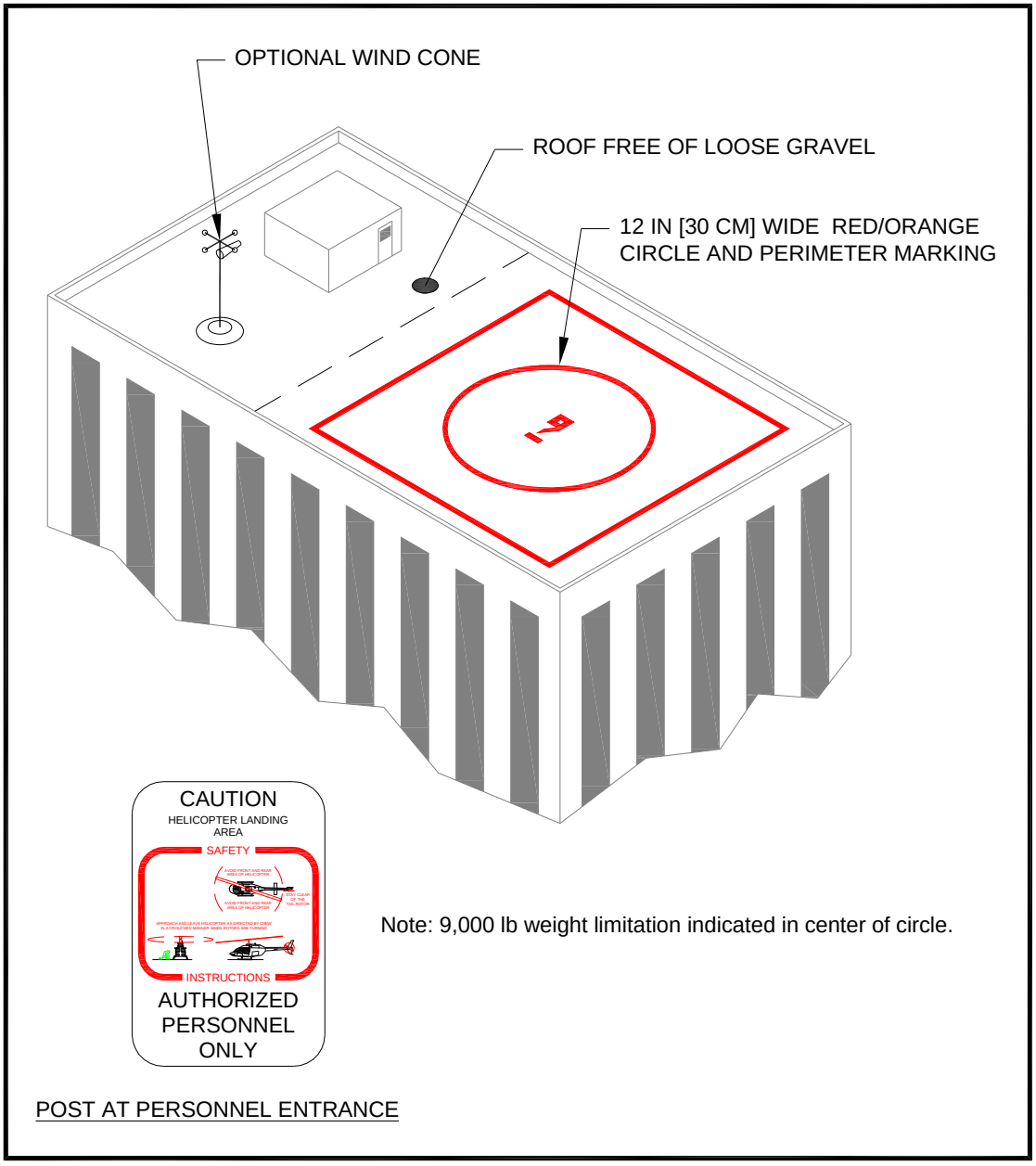

Figure A-1. Rooftop Emergency Landing Facility

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Appendix B. Helicopter Data

This appendix contains selected helicopter data needed by a heliport designer. These data represent the most critical weight, dimensional, or other data entry for that helicopter model, recognizing that specific versions of the model may weigh less, be smaller in some feature, carry fewer passengers, etc.

Various helicopter manufacturers have provided this information, but confirm data by contacting the manufacturer(s) of the specific helicopter(s) of interest.

Legend

A	Manufacturer name and helicopter model
B	Maximum takeoff weight in pounds.
D	Overall length in feet. (Rotors at their maximum extension.)
H	Overall height in feet. (Usually at tail rotor.)
RD	Rotor diameter in feet.
E	Number of blades.
F	Rotor plane clearance in feet.
TR	Distance from rotor hub to tip of tail rotor in feet.
I	Tail rotor diameter (in feet).
J	Number of tail rotor blades.
K	Tail rotor ground clearance in feet.
L	Type of undercarriage.
UCL	Undercarriage length in feet.
UCW	Undercarriage width in feet. (The distance between the outside edges of the tires or the skids.)
M	Number and type of engines
N	Number of crew and passengers.

Manufacturer/ Model	Max Takeoff Weight	Overall Length (ft)	Overall Height (ft)	Main Rotor				Tail Rotor			Undercarriage			Number of Engines/ Type	Crew Number/ Pax Number
				Diameter (ft)	Number of Blades	Ground Clearance (ft)	Tail Rtr Circle Radius (ft)	Diameter (ft)	Number of Blades	Ground Clearance (ft)	Type	Length (ft)	Width (ft)		
A	B	D	H	RD	E	F	TR	I	J	K	L	UCL	UCW	M	N
AgustaWestland															
A-109A	5,732	42.8	11.2	36.1	4	10	25	6.7	2	2.3	wheel	11.6	7.5	2-T	1-2& 6-7
A-119 Koala	5,997	42.7	12.4	36.6	4	8.3	25.5	6.4	2	4.2	skid	13.4	5.5	1-T	1&6-7
AW-109E Power	6,283	42.8	11.5	36.1	4	8		6.4	2	3	wheel	11.5	7.1	2-T	1&7
AW-109S Grand	7,000	42.5	11.2	35.5	4	8		6.4	2	3.3	wheel	12.3	7.1	2-T	1-2& 6-7
AW-119 Ke	6,283	42.4	11.8	35.5	4	9.3		6.4	2	3.8	skid	11.1	7	1-T	1&6-7
AW-139	14,991	54.7	16.4	42.6	5	12.9		8.9	4	7.5	wheel	14.2	10	2-T	1-2& 15
AW-101	34,392	74.8	21.7	61	5	15.4	45	13.1		8.4	wheel	23	14.8	3-T	3&30
Westland WG30	12,800	52.2	15.5	43.7	4	12.5	31	8	4	7.5	wheel	17.9	10.1	2+T	2&19
Bell Helicopter															
47G	2,950	43.6	9.3	37.1	2	5	25	6.1	2	3.5	skid	9.9	7.5	1-P	1&2-3
205B, UH-1H, Huey II, 210	10,500	57.8	14.5	48	2	7.3	33.1	8.5	2	5.9	skid	12.1	8.8	1-T	1&14
206B-1,2,3	3,350	39.2	10.8	33.4	2	6	22.5	5.2	2	2.1	skid	8.1	6.7	1-T	1&4
206L-1,3,4	4,450	42.4	10.9	37	2	6.4	24	5.4	2	3.5	skid	9.9	7.7	1-T	1&6
212	11,200	57.3	14.9	48.2	2	7.5	22.2	8.5	2	6.1	skid	12.1	8.8	2-T	1&14
214ST	17,500	62.2	15.9	52	2	6.5	37	9.7	2	3.5	wheel/ skid	12.1	8.6	2-T	2& 16-17
222B, UT	8,250	50.3	12.2	42	2	9.2	29.2	6.9	2	2.7	wheel/ skid	12.2	7.8	2-T	1&9
230	8,400	50.3	11.7	42	2	9.2	29.2	6.9	2	2.7	wheel/ skid	12.2	7.8	2-T	1&9
407	5,250	41.4	10.2	35	4	7.8	24.3	5.4	2	3.2	skid	9.9	8.1	1-T	1&6
412EP, SP, HP	11,900	56.2	14.9	46	4	11.5	34	8.6	2	4.8	skid	12.1	9.5	2-T	1&14
427VFR	6,550	42.6	10.5	37	4	6.4	24.1	5.7	2	3.3	skid	10	8.3	2-T	1&7
429	7,000	43	13.3	36	4	8.5		5.4	2	3.5	skid	9.9	8.8	2-T	1&7
430	9,300	50.3	13.3	42	4	8.2	29.2	6.9	2	3.7	wheel/ skid	12.4	9.2	2-T	1&9

Manufacturer/ Model	Max Takeoff Weight	Overall Length (ft)	Overall Height (ft)	Main Rotor				Tail Rotor			Undercarriage			Number of Engines/ Type	Crew Number/ Pax Number
				Diameter (ft)	Number of Blades	Ground Clearance (ft)	Tail Rtr Circle Radius (ft)	Diameter (ft)	Number of Blades	Ground Clearance (ft)	Type	Length (ft)	Width (ft)		
A	B	D	H	RD	E	F	TR	I	J	K	L	UCL	UCW	M	N
Boeing															
107/CH-46E	24,300	84.3	16.7	51	3	15	59	51	3	17	wheel	24.9	14.5	2-T	3&25
234/CH-47F/G	54,000	99	19	60	3	11	69	60	3	19	wheel	22.5	10.5	2-T	3&44
Brantly/ Hynes															
B-2B	1,670	28.1	6.9	23.8	3	4.8	16	4.3	2	3	skid	7.5	6.8	1-P	1&1
305	2,900	32.9	8.1	28.7	3	8	19	4.3	2	3	wheel/ skid	6.2	6.8	1-P	1&4
Enstrom															
F-28F/ 280FX	2,600	29.3	9	32	3	6	20.6	4.7	2	3.1	skid	8	7.3	1-P	1&2
480B/ TH-28	3,000	30.1	9.7	32	3	6.5	21.2	5	2	3.6	skid	9.2	8	1-T	1&4
Erickson															
S-64E/F Air Crane	42,000 - 47,000	88.5	25.4	72	6	15.7	53	16	4	9.4	wheel	24.4	19.9	2-T	3&0
Eurocopter															
SA-315 Lama	5,070	42.3	10.2	36.2	3	10.1	20	6.3	3	3.2	skid	10.8	7.8	1-T	1&4
SA-316/319 Alouette	4,850	33.4	9.7	36.1	3	9.8	27.7	6.3	3	2.8	wheel	11.5	8.5	1-T	1&4
SA-330 Puma	16,315	59.6	16.9	49.5	4	14.4	35	10	5	6	wheel	13.3	9.8	2-T	2&20
SA/AS-332, Super Puma	20,172	61.3	16.3	53.1	4	14.6	36	10	5	7.1	wheel	17.3	9.8	2-T	2&24
SA-341/342 Gazelle	4,100	39.3	10.2	34.5	3	8.9	23	Fenstron		2.4	skid	6.4	6.6	1-T	1&4
AS-350 A Star	4,960	42.5	11	35.1	3	10.6	25	6.1	2	2.3	skid	4.7	7.5	1-T	1&6
AS-355 Twin Star	5,732	42.5	9.9	35.9	3	10.3	25	6.1	2	2.3	skid	9.6	7.1	2-T	1&6
AS-360 Dauphin	6,600	43.3	11.5	37.7	4	10.7	25	Fenstron		2.6	wheel	23.7	6.4	1-T	1&13
AS-365 Dauphin/H-65 Dolphin	9,480	45.1	13.3	39.2	4	11.4	24	Fenstron		2.6	wheel	11.9	6.2	2-T	1&11
BO-105	5,732	38.9	11.5	32.3	4	9.8	23	6.2	2	6.1	skid	8.3	8.2	2-T	1&5
BK-117	7,385	42.7	12.6	36.1	4	11	25	6.4	2	6.3	skid	11.6	8.2	2-T	1&10

Manufacturer/ Model	Max Takeoff Weight	Overall Length (ft)	Overall Height (ft)	Main Rotor				Tail Rotor			Undercarriage			Number of Engines/ Type	Crew Number/ Pax Number
				Diameter (ft)	Number of Blades	Ground Clearance (ft)	Tail Rtr Circle Radius (ft)	Diameter (ft)	Number of Blades	Ground Clearance (ft)	Type	Length (ft)	Width (ft)		
A	B	D	H	RD	E	F	TR	I	J	K	L	UCL	UCW	M	N
EC-120	3,780	37.8	11.2	32.8	3	10.1	24.6	Fenstron		2.1	skid	9.4	6.8	1-T	1&4
EC-130	5,291	41.5	11.8	35.1	3	11	23.7	Fenstron		5.3	skid	10.5	7.9	1-T	1&7
EC-135	6,250	40	11.5	33.5	4	11	22.8	Fenstron		5.6	skid	10.5	6.6	2-T	1&6
EC-145/ UH-72A	7,904	42.7	13	36.1	4	11.3	28	6.4	2	10.7	skid	9.5	7.9	2-T	1&8
EC-155	10,692	46.9	14.27	41.3	5	12	23	Fenstron		3.1	wheel	12.8	6.2	2-T	2&12
EC-225	24,332	64	16.3	53.1	5	15.1	38	10.3	4	3.5	wheel	17.2	9.8	2-T	2&24
Kaman															
K-Max/ K1200	7,000	52	21	48.2	4	10.7	28	n	a	n/a	wheel	15.3	11.3	1-T	1&0
SH-2G Seasprite	14,200	52.5	15.1	44	4			8.1	4		wheel			2-T	3&8
MD Helicopters															
500E	3,000	30.8	8.4	26.4	5	8.2		4.6	2	2	skid	8.1	6.3	1-T	1&4
530F	3,100	32.1	8.1	27.4	5	8	19	4.8	2	1.3	skid	8.1	6.4	1-T	1&4
520N	3,350	32.1	9.7	27.4	5	9.2	17	NOTAR		n/a	skid	8.1	6.3	1-T	1&4
600N	4,100	36.9	9.8	27.5	6	9.2		NOTAR		n/a	skid	10.1	8.8	1-T	1&7
Explorer/ 902	6,500	38.8	12	33.8	5	12	23	NOTAR		n/a	skid	7.3	7.3	2-T	1-2& 6-7
Robinson															
R-22 Beta	1,370	28.8	8.9	25.2	2	8.8	16	3.5	2	4.1	skid	4.2	6.3	1-P	1&1
R-44 Raven	2,500	38.3	10.8	33	2	10.5	22	4.8	2	3.8	skid	4.2	7.2	1-P	1&3
R-66 Turbine	2,700	38.3	11.4	33	2	10.5		5	2	3.6	skid	4.2	7.5	1-T	1&4
Fairchild-Hiller/ Rogerson-Hiller															
360/UH-12/OH-23	3,100	40.8	10.2	35.4	2	10.1	23	6	2	4	skid	8.3	7.5	1-P	1&3
FH/RH-1100	3,500	41.3	9.2	35.3	2	9.5	24	6	2	3	skid	7.9	7.2	1-T	1&4

Manufacturer/ Model	Max Takeoff Weight	Overall Length (ft)	Overall Height (ft)	Main Rotor				Tail Rotor			Undercarriage			Number of Engines/ Type	Crew Number/ Pax Number
				Diameter (ft)	Number of Blades	Ground Clearance (ft)	Tail Rtr Circle Radius (ft)	Diameter (ft)	Number of Blades	Ground Clearance (ft)	Type	Length (ft)	Width (ft)		
A	B	D	H	RD	E	F	TR	I	J	K	L	UCL	UCW	M	N
Sikorsky/ Schweizer															
HU-269A/A-1/B, TH55A	1,850	29	9	26	3	8.8	15	3.8	2	2.5	skid	8.3	6.5	1-P	1&1
300C	2,050	30.8	8.7	26.8	3	8.7	15.3	4.3	2	2.8	skid	8.3	6.5	1-P	1&2
300CB/CBi	1,750	30.8	8.7	26.8	3	8.7	15.3	4.3	2	2.8	skid	8.3	6.5	1-P	1&1
330/330SP/ 333	2,550	31.2	11	27.5	3	9.2	15.3	4.3	2	3.2	skid	8.3	6.5	1-T	1&2-3
S-434	2,900	31.2	11	27.5	4	9.2	15.3	4.3	2	3.2	skid	8.3	6.5	1-T	1&2-3
S-55/H19	7,900	62.6	13.1	53	3			8.2	2		wheel			1-T	2&12
S-58/H34	14,600	65.8	15.9	56	4	11.4	38	9.5	4	6.4	wheel	28.3	14	2-T	2&16
S-61/H-3	22,000	72.8	19	62	5	12.3	40	10.3	5	8.6	wheel	23.5	14	2-T	3&28
S-76A/B/C/D	11,700	52.5	14.6	44	4	8.2	30.5	8	4	6.5	wheel	16.4	8	2-T	2&12
S-92	26,500	68.5	17.9	56.3	4	9.8	39.9	11	4	6.9	wheel	20.3	10.4	2-T	2&19
S-70i/UH-60L Blackhawk	22,000	64.8	16.8	53.8	4	7.7	38	11	4	6.6	wheel	29	9.7	2-T	3&12
CH-53K	74,000	99.5	27.8	79	7	17	59.6	20	4	9.5	wheel	27.3	13	3-T	3&55

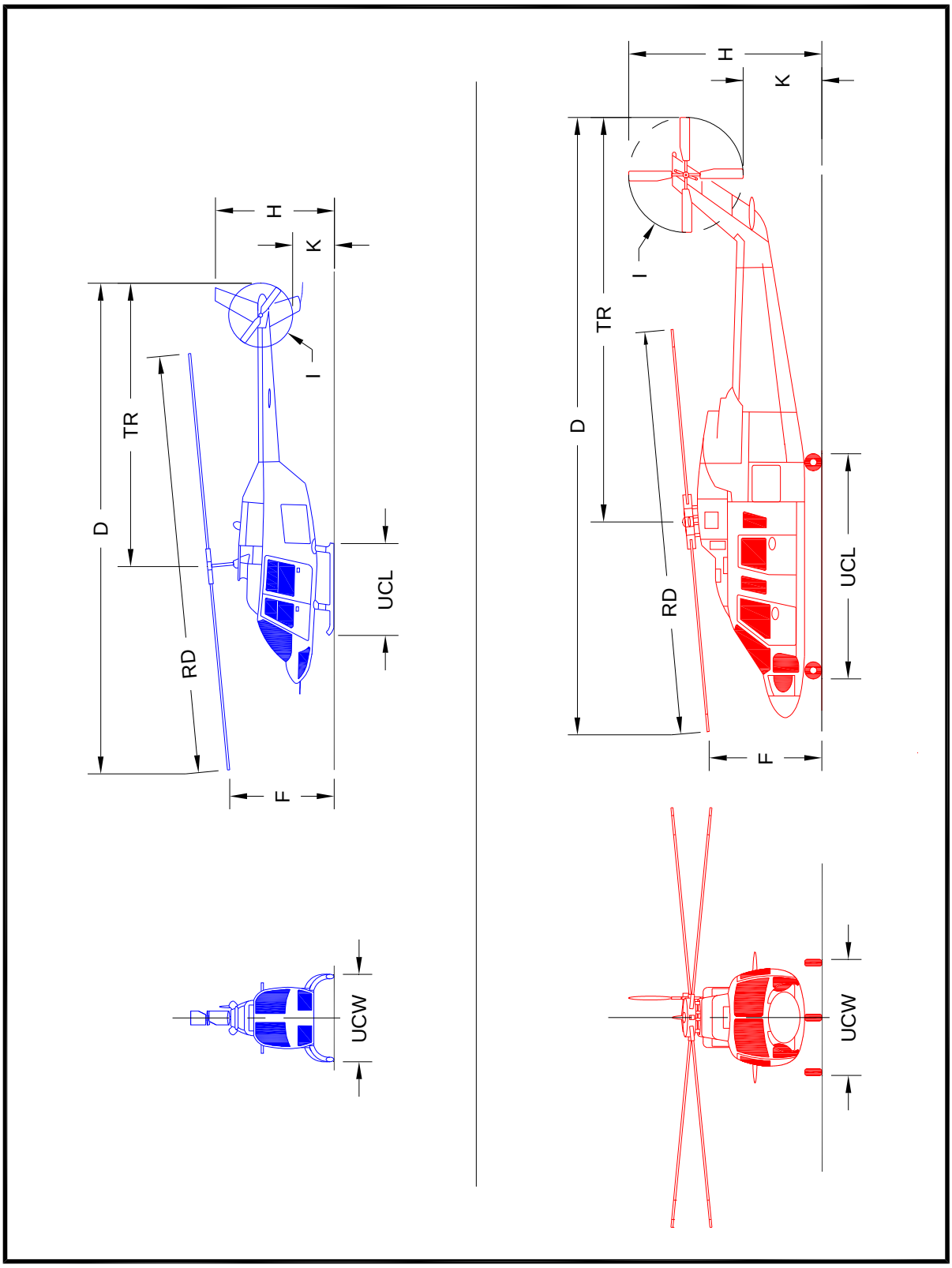


Figure B–1. Helicopter Dimensions

Appendix C. Dimensions for Marking Size and Weight Limitations

The form and proportion of numbers for marking TLOF and parking area size and weight limitations are shown below.

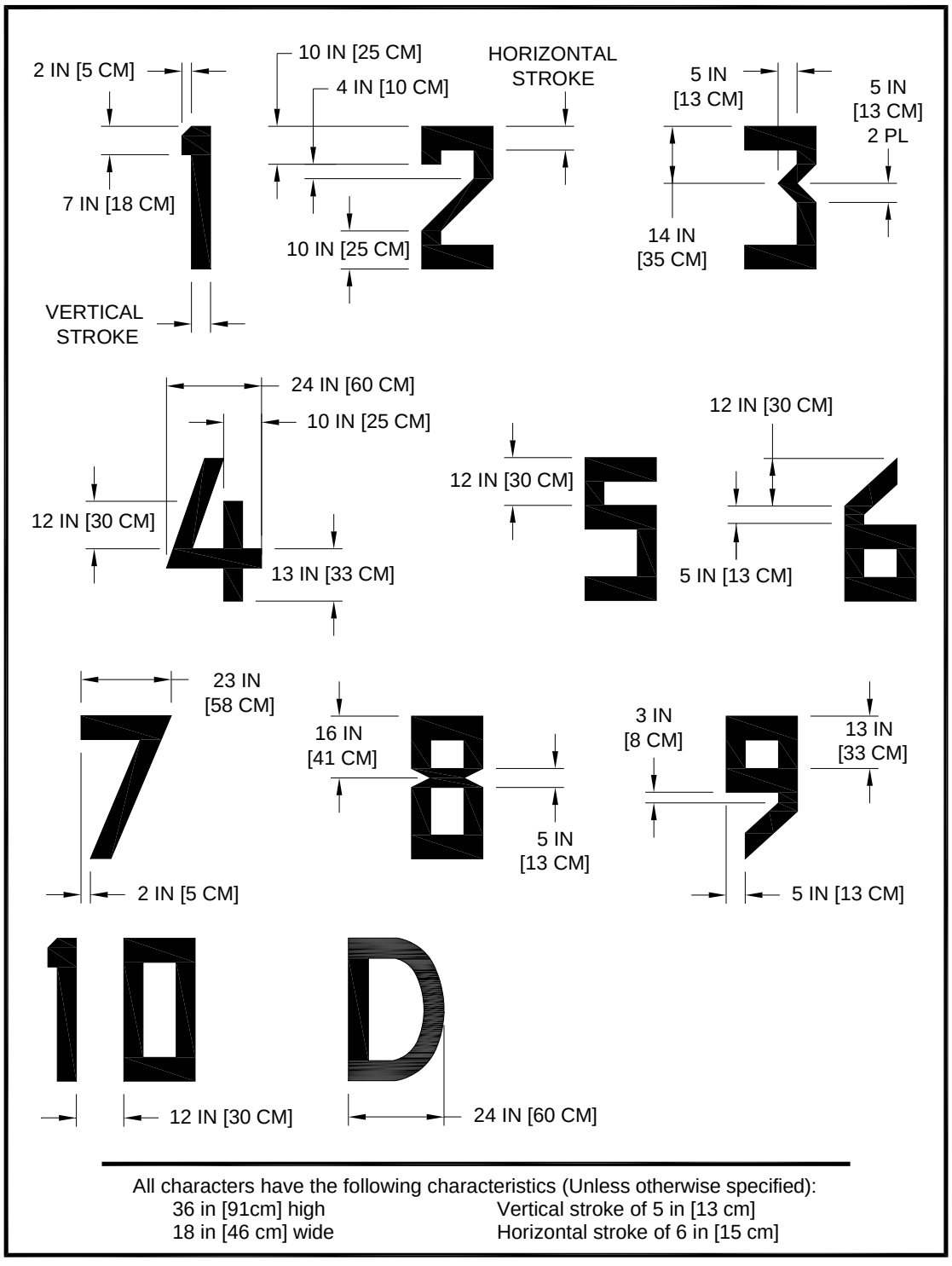


Figure C–1. Form and Proportions of 36 Inch (91 cm) Numbers for Marking Size and Weight Limitations

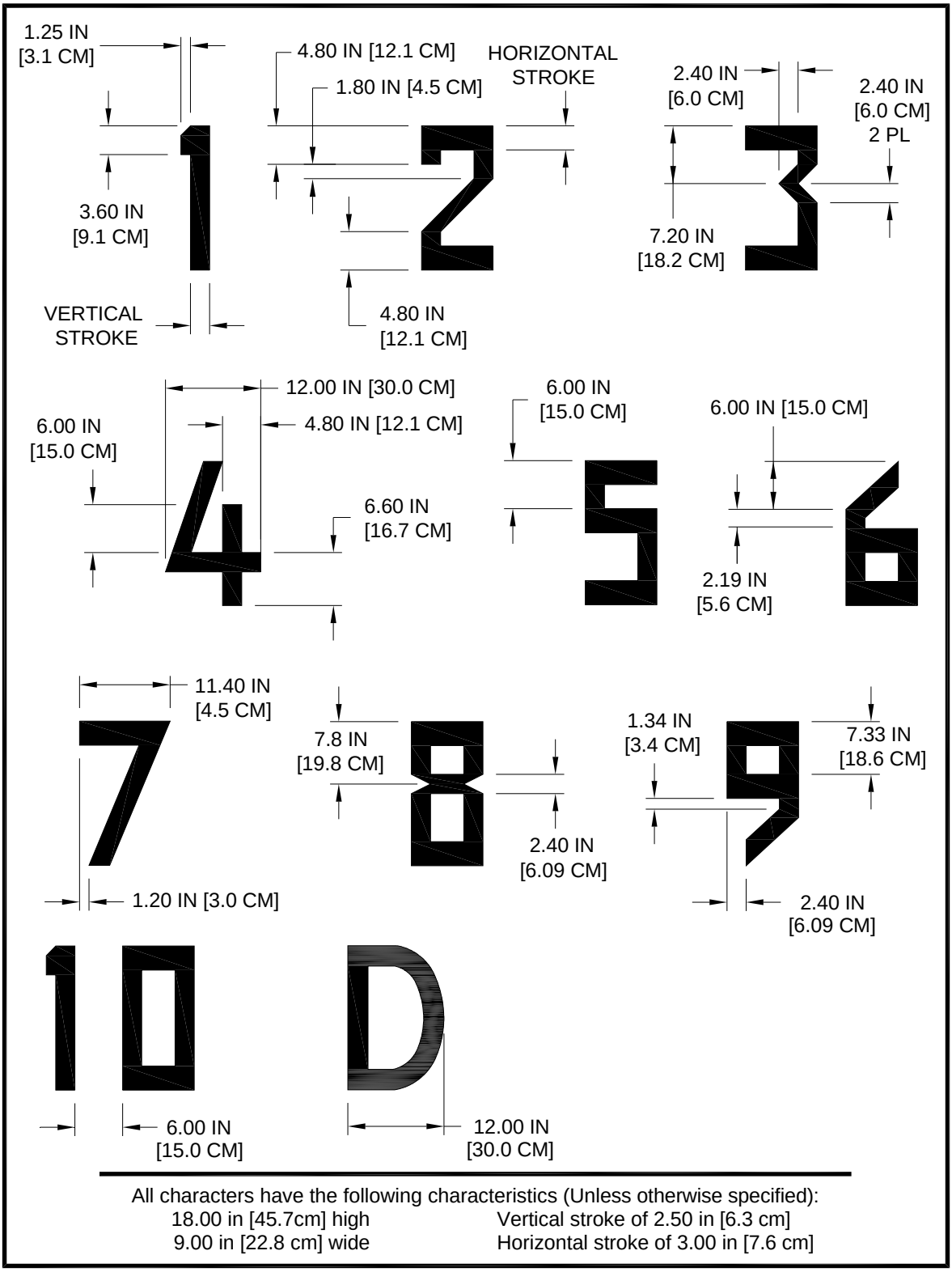


Figure C–2. Form and Proportions of 18 Inch (45.7 cm) Numbers for Marking Size and Weight Limitation

Appendix D. Associated Publications and Resources

The following is a listing of related documents.

Current Advisory Circulars are available from the FAA web site http://www.faa.gov/regulations_policies/advisory_circulars/.

Current Electronic Code of Federal Regulations (e-CFRs) are available from the Government Printing Office web site http://www.gpoaccess.gov/ecfr/.

Airport Advisory Circulars are available at the Airports web site http://faa.gov/airports/resources/advisory_circulars/.

Technical reports are available at the National Technical Information Service (NTIS) web site http://www.ntis.gov/.

To find state and regional aviation offices, see http://www.faa.gov/airports/resources/state_aviation/.

For information about grant assurances, see http:/www.faa.gov/airports/aip/grant_assurances.

1. 14 CFR Part 27, Airworthiness Standards: Normal Category Rotorcraft.
2. 14 CFR Part 29, Airworthiness Standards: Transport Category Rotorcraft.
3. 14 CFR Part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace.
4. 14 CFR Part 91, General Operating and Flight Rules.
5. 14 CFR Part 121, Air Carrier Certification.
6. 14 CFR Part 135, Operating Requirements: Commuter and on demand operations and rules governing persons on board such aircraft.
7. 14 CFR Part 139, Certification of Airports.
8. 14 CFR Part 151, Federal Aid to Airports.
9. 14 CFR Part 152, Airport Aid Program.
10. 14 CFR Part 157, Notice of Construction, Alteration, Activation, and Deactivation of Airports.
11. AC 70/7460-1, Obstruction Marking and Lighting.
12. AC 150/5190-4, A Model Zoning Ordinance to Limit Height of Objects Around Airports.
13. AC 150/5200-30, Airport Winter Safety and Operations.
14. AC 150/5220-16, Automated Weather Observing Systems (AWOS) for Non-Federal Applications.
15. AC 150/5230-4, Aircraft Fuel Storage, Handling, and Dispensing on Airports.
16. AC 150/5300-18, General Guidance and Specifications for Submission of Aeronautical Surveys to NGS: Field Data Collection and Geographic Information System (GIS) Standards.
17. AC 150/5320-6, Airport Pavement Design and Evaluation.
18. AC 150/5340-30, Design and Installation Details for Airport Visual Aids.
19. AC 150/5345-12, Specification for Airport and Heliport Beacons.
20. AC 150/5345-27, Specification for Wind Cone Assemblies.
21. AC 150/5345-28, Precision Approach Path Indicator Systems (PAPI).

22. AC 150/5345-39, FAA Specification L-853, Runway and Taxiway Retroreflective Markers.
23. AC 150/5345-46, Specification for Runway and Taxiway Light Fixtures.
24. AC 150/5345-52, Generic Visual Glideslope Indicators (GVGI).
25. AC 150/5360-9, Planning and Design of Airport Terminal Facilities at Non-Hub Locations.
26. AC 150/5360-14, Access to Airports by Individuals with Disabilities.
27. AC 150/5370-10, Standards for Specifying Construction of Airports.
28. FAA 8260-series orders, various on flight procedures, airspace, others.
    a. FAA Order 8260.3B, U. S. Standard for Terminal Instrument Procedures (TERPS).
    b. FAA Order 8260.54A, U.S. Standard for Area Navigation (RNAV).
    c. FAA Order 8260.72, Performance Based Navigation (PBN) Fly-By (FB)/Radius-to-Fix (RF) Turn Maximum Design Bank Angle Limits
29. FAA Grant Assurance No. 34, Policies, Standards, and Specifications.
30. FAA Order 1050.1 Policies and Procedures for Considering Environmental Impacts.
31. FAA Order 5050.4, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Projects.
32. FAA Order JO 7400.2, Procedures for Handling Airspace Matters.
33. FAA Passenger Facility Charge (PFC) Assurance No. 9, Standards and Specifications
34. FAA Technical Report FAA/RD-84/25, Evaluating Wind Flow Around Buildings on Heliport Placement, National Technical Information Service (NTIS) accession number AD-A153512.
35. FAA Technical Report FAA/RD-92/15, Potential Hazards of Magnetic Resonance Imagers to Emergency Medical Service Helicopter Services, National Technical Information Service (NTIS) accession number AD-A278877.
36. ICAO Annex 14, Vol. II – Heliports.
37. National Fire Protection Association (NFPA) 403, Standard for Aircraft Rescue and Fire-Fighting Services.
38. National Fire Protection Association (NFPA) 407, Standard for Aircraft Fuel Servicing.
39. National Fire Protection Association (NFPA) 418, Standard for Heliports.
40. Roadmap for Performance Based Navigation (PBN).

U.S. Department of Transportation
Federal Aviation Administration

Advisory Circular

Subject: Helicopter Air Ambulance Operations

Date: 3/26/15 **AC No:** 135-14B
Initiated by: AFS-200 **Change:**

Helicopters provide a means of transporting people in urgent need of medical assistance. These operations are unique due to the urgent nature of the flight. Each year thousands of patients are transported by helicopter while being attended by medical personnel trained to respond to their needs. Helicopter air ambulances (HAA) are equipped with medical monitoring and support systems to ensure proper care en route.

The HAA industry continues to expand. In response to the dynamic growth of this industry, the Federal Aviation Administration (FAA) has issued this advisory circular (AC) to provide information and guidelines to assist existing HAA operators, other Title 14 of the Code of Federal Regulations (14 CFR) part 135 operators considering becoming an HAA operator and those considering new-startup HAA operations. To address an increase in fatal HAA accidents, the FAA has implemented new operational procedures and additional equipment requirements for HAA operations. The FAA, HAA operators and medical community all play vital roles in applying these changes to ensure safety. Implementing a safety culture will benefit all aspects of HAA operations.

Part 135 subpart L addresses safety improvements for commercial helicopter operations through requirements for equipment, pilot testing, alternate airports and increased weather minimums for all General Aviation (GA) helicopter operations. Many of these requirements also address National Transportation Safety Board (NTSB) safety recommendations directed at improving HAA safety.

John S. Duncan
Director, Flight Standards Service

CONTENTS

CONTENTS (Continued)

CHAPTER 1. GENERAL

1-1. PURPOSE.

a. Background. This advisory circular (AC) provides information and guidance material specifically applicable to helicopter air ambulance (HAA) operations. The Federal Aviation Administration (FAA) issued a final rule in 2014: Helicopter Air Ambulance, Commercial Helicopter, and Part 91 Helicopter Operations. The bulk of the 2014 HAA rule package codifies requirements formerly contained in Operations Specification (OpSpec) A021, Helicopter Air Ambulance Operations, and which are now in Title 14 of the Code of Federal Regulations (14 CFR) Part 135 Subpart L, Helicopter Air Ambulance Equipment, Operations, and Training.

b. Phraseology Changes.

(1) The term Emergency Medical Service/Helicopter (EMS/H or HEMS) is obsolete. It is being replaced with HAA because, though a critical life and death medical emergency may exist, air ambulance flights are not operated as an emergency. Pilots and operator management personnel should not make flight decisions based on the condition of the patient, but rather upon the safety of the flight.

(2) Management should discourage the use of the term "mission" to describe flight assignments in operator manuals, training, and risk analysis programs. The emphasis should be on providing air transportation rather than completing a "mission." The mission concept has been derived from military tactical or combat aviation policies that factor in "acceptable losses," and may affect the normal commercial civil air transportation go/no-go decisionmaking process.

c. Scope. AC 135-14B supports the 2014 final rule. The information provided in this AC cites the associated regulations and other sources for easy reference. This AC is not mandatory and does not constitute a regulation. Nothing in this AC alters legal requirements for HAA operators to comply with regulations. This AC also refers to recommended practices that are not mandatory and do not reflect regulations and their requirements. When properly followed, these compiled industry best practices can enhance safety and reduce the number of HAA accidents.

1-2. CANCELLATION. AC 135-14A, Emergency Medical Services/Helicopter (EMS/H), dated June 20, 1991, is canceled.

1-3. OBJECTIVE. The primary objective of this AC is to provide information on policy and identify best practices for HAA operations based on multiple sources including the HAA rules published in 2014.

1-4. AUDIENCE. This AC is addressed to existing HAA operators and prospective part 135 certificate holders intending to conduct HAA operations, their employees, employees of associated medical services and public service.

1-5. RELATED 14 CFR PARTS. Title 14 CFR parts 1, 27, 29, 43, 61, 65, 91, 119, 120, 135 and 157.

1-6. DEFINITIONS/ABBREVIATIONS.

a. Accident/Incident Plan/Post-Accident/Incident Plan (AIP/PAIP). Includes emergency response procedures that should be used as a basis for training or for reference in the event of a mishap or other emergency.

b. Advisory Circular (AC).

c. Aeromedical Director. A licensed medical professional associated with a HAA operation, ultimately responsible for patient care during air transport. The Aeromedical Director has no operational control authority or influence over decisionmaking related to conduct of flights.

d. Air Ambulance. An aircraft used in air ambulance operations. The aircraft need not be used exclusively as an air ambulance aircraft, and the equipment need not be permanently installed.

e. Air Ambulance Operations. Air transportation of a person with a health condition that requires medical personnel as determined by a health care provider or transportation of human organs; or holding out to the public as willing to provide air transportation to a person with a health condition that requires medical personnel or transplant organs including, but not limited to, advertising, solicitation, association with a hospital or medical care provider.

f. Air Medical Resource Management (AMRM). A dynamic process including pilots, medical personnel (not limited to those participating in HAA flights), maintenance technicians, operational support personnel and management staff that optimizes human–machine interface and related interpersonal issues, with maximum focus on communication skills and team-building curricula. (Refer to the current edition of AC 00-64, Air Medical Resource Management.)

g. Autorotational Distance. The distance a rotorcraft can travel in autorotation as described by its manufacturer in the approved Rotorcraft Flight Manual (RFM). (Refer to part 135, § 135.168.)

h. Certificate-Holding District Office (CHDO). The FAA Flight Standards Service (AFS) CHDO with responsibility for management of an air carrier's certificate, charged with the overall inspection and surveillance of that certificate holder's operations. (Refer to part 1, § 1.2.)

i. Code of Federal Regulations (CFR).

j. Communications Specialist. An individual trained and qualified by the operator to receive and coordinate one or more of a range of activities, including but not limited to receiving flight requests for HAA operations, communications with medical, first response and other HAA organizations, communications with HAA crews and flight locating. The employment and training of communications specialists has been identified as an HAA industry best practice. (See paragraph 3-2f in this AC.)

k. Crew Resource Management (CRM). The use of all the available resources, information, equipment and people to achieve safe and efficient flight operations; approved CRM training is required for flightcrews in accordance with § 135.330. (Refer also to § 135.330 and the current edition of AC 120-51, Crew Resource Management Training, for more information.)

l. Datalink. A general term referring to a variety of technologies used to transmit and receive wireless electronic data between on-aircraft systems and off-aircraft systems.

m. Extended Overwater Operation. Per § 1.1, with respect to helicopters, an operation over water at a horizontal distance of more than 50 nautical miles (NM) from the nearest shoreline and more than 50 NM from the nearest offshore heliport structure.

n. Flight Following. Active contact with an aircraft throughout all of a flight (including time on the ground), either through voice radio contact with the pilot or through automated flight following systems. Considered a best practice in the HAA industry.

o. Flight Locating. The certificate holder is required by regulation to use flight locating procedures (refer to § 135.79), unless an FAA flight plan is filed and activated. Flight locating by HAA operations, even where it is not required by regulation, is recommended as an HAA industry best practice.

p. Flight Standards District Office (FSDO).

q. General Operations Manual (GOM). Required to be compiled to include, at minimum, sections mandated by regulation, including visual flight rules (VFR) flight planning procedures (§ 135.615) and an FAA approved preflight risk analysis (§ 135.617). A GOM requires acceptance by the FAA to be valid.

r. Geographic Information Systems (GIS). A collection of computer hardware, software and geographic data designed to efficiently capture, store, manage, map, analyze and display geographically referenced information.

s. Helicopter Air Ambulance (HAA). A helicopter, defined for the purposes of § 135.619, that is identified in the operator's OpSpecs. It need not be used exclusively as an HAA. HAA-specific equipment need not be permanently installed.

t. Helicopter Air Ambulance (HAA) Operation. A flight or sequence of flights, with a patient, donor organ or human tissue, or medical personnel on board for the purpose of medical transportation, conducted by a part 135 certificate holder authorized by the Administrator to conduct HAA operations. A HAA operation also includes, but is not limited to:

(1) Flights conducted to position the helicopter at a site where medical personnel, a patient, donor organ or human tissue will be picked up;

(2) Flights conducted to reposition the helicopter after completing transportation of the medical personnel, patient or donor organ or human tissue transport; and

(3) Flights initiated for the transport of a patient, donor organ or human tissue that are terminated due to weather or other reasons. (Refer to § 135.601.)

u. Helicopter Emergency Medical Service (HEMS). Obsolete term. The FAA and industry are moving to the term HAA for enhanced accuracy. HAA flights do not constitute an emergency flight. Replacement of the term HEMS with HAA will take place over the next several years as each relevant document is updated. The term HAA will be used exclusively throughout this document.

v. Helicopter Landing Area (also Heliport or Landing Zone (LZ)). An area of land or water or a structure used or intended to be used for the landing and takeoff of helicopters. OpSpec A021 grants latitude to a helicopter operator for landing site selection as well as the authority to land on appropriate sites during both day and night in HAA operations. (Refer to § 1.1; the current edition of AC 150/5390-2, Heliport Design; and OpSpec A021.)

w. Helicopter Night Vision Goggle Operations (HNVGO). That portion of a flight that occurs during the time period from one hour after sunset to one hour before sunrise where the pilot maintains visual surface reference using night vision goggles (NVG) in an aircraft that is approved for such operations. (Refer to part 61, § 61.1.)

x. Helicopter Terrain Awareness and Warning System (HTAWS). A terrain and obstacle database-driven awareness and warning system configured specifically for a helicopter's operating environment. This system correlates ship's position, altitude, direction of flight and speed with digital obstacle and terrain maps.

y. Inadvertent Instrument Meteorological Condition (IIMC). An emergency condition when an aircraft inadvertently transitions from visual meteorological conditions (VMC) into instrument meteorological conditions (IMC).

z. Instrument Flight Rules (IFR). Operations when weather conditions are below the minimum for flight under VFR.

aa. Instrument Meteorological Conditions (IMC). Meteorological conditions expressed in terms of visibility, distance from clouds and ceiling that are less than that specified for VMC, requiring flight to be conducted under IFR.

bb. Landing Zone (LZ). See subparagraph 1-6v, Helicopter Landing Area.

cc. Local Flying Area (LFA). A geographic area of not more than 50 NM in any direction from a location designated by a HAA operator and approved by the FAA in OpSpec A021. (Refer to § 135.609(b)(1).)

dd. Medical Crewmembers. Also referred to as medical flight personnel, as opposed to flightcrew members. A medical crewmember (medical personnel) is an individual with medical training, carried aboard a HAA during flights or flight segments. Crewmembers typically include: flight nurses, paramedics, respiratory specialists, neonatal specialist and other medically-trained specialists. (Refer to § 135.601(b)(2).)

ee. Mountainous. Designated mountainous areas as listed in 14 CFR part 95. (Refer to § 135.601.)

ff. Night Vision Goggles (NVG). A NVG is a Night Vision Imaging System (NVIS) (q.v.) appliance worn by crewmembers that enhances the ability to maintain visual surface reference under low-light flight conditions.

gg. Night Vision Imaging System (NVIS). An approved light amplification appliance enhancing visual sensitivity in low light conditions, combined with specialized lighting systems that are type certificate (TC) approved for the type of helicopter in which it is installed and are compatible with NVGs being used in that helicopter.

hh. Non-Mountainous. Areas other than mountainous areas as listed in part 95. (Refer to § 135.601.)

ii. Operations Control Center (OCC). An OCC is a centralized, dedicated facility staffed by trained HAA Operations Control Specialist(s) (OCS) (see subparagraph 1-6jj. The OCC is described at § 135.618. OCC review includes a wide range of safety-related items detailed in § 135.619(a).

NOTE: OCCs are required for certificate holders authorized to conduct HAA operations with 10 or more HAA-capable helicopters assigned to their OpSpecs, and are strongly encouraged for all operators. (Refer to § 135.619.)

jj. Operations Control Specialist (OCS). An individual within the OCC who provides operational support for the certificate holder's air ambulance operations and is both initially and recurrently trained as specified in § 135.619(d) and (f). An OCS interfaces with the HAA pilot(s) prior to each flight request acceptance.

kk. Operations Specification (OpSpec). Issued by FAA to specify the commercial air operations it has authorized the certificate holder to carry out. OpSpec A021 authorizes HAA service. Before OpSpec A021 can be issued, the operator must meet the regulatory requirements of part 135 subpart L.

ll. Overwater Flight. Operation of a rotorcraft beyond autorotational distance from the shoreline. (See subparagraph 1-6xx, Shoreline.)

mm. Patient. A person under medical treatment. For the purposes of this definition, human transplant organs or tissue are not patients, but are explicitly included under HAA operations, regulations and practices. They are treated in the same manner as people under medical treatment.

nn. Pilot in Command (PIC). The PIC of an aircraft is directly responsible for and is the final authority as to the operation of that aircraft.

oo. Principal Avionics Inspector (PAI). The PAI at the CHDO specifically responsible for aviation safety inspection and oversight of a HAA operator.

pp. Principal Maintenance Inspector (PMI). The PMI at the CHDO specifically responsible for aviation safety inspection and oversight of a HAA operator.

qq. Principal Operations Inspector (POI). The POI at the CHDO specifically responsible for aviation safety inspection and oversight of a HAA operator.

rr. Residual Risk. Residual risk is the safety risk that exists after all controls have been implemented or exhausted and verified (to ensure that the risk acceptance is in accordance with a pre-existing documented risk analysis procedure.)

ss. Response Scene. Unimproved ad hoc LZ sites and other off-airport and off-heliport site locations where HAA flight landings are authorized under the authority of OpSpec A021.

tt. Risk Analysis. A formal methodology for guiding HAA decisionmaking. Its procedures, principles and policies are documented and are the subject of training by HAA operators. They include multiple people with defined roles that have been documented and are the subject of training. As total risk exceeds the operator's pre-determined threshold, approval at higher levels is required. (Refer to §§ 135.615 and 135.617(a)(5).)

uu. Risk Assessment. Risk assessment is a key element of the broader risk analysis. The two terms assessment and analysis should not be used interchangeably. Process documentation should identify risk factors the HAA operator may consider as part of risk assessment. The operator should assign to each risk factor an appropriate numerical value reflecting both the likelihood of occurrence and severity of outcome. Section 135.617 requires HAA operators to have an FAA approved and documented Risk Analysis Program that includes procedures for elevating the final post mitigation risk to a higher management level for approval when the total risk exceeds a predetermined threshold.

vv. Safety Management System (SMS). A SMS is a formal, top-down approach to managing safety risk. It is a system to manage safety, including the necessary organizational structures, accountabilities, policies and procedures. Implementing a SMS can provide useful tools to the HAA operator for complying with the requirements of § 135.617. Additional information and resources on SMS can be found in the current edition of AC 120-92, Safety Management Systems for Aviation Service Providers, and in Chapter 8 and Appendix B of this AC.

ww. Second in Command (SIC).

xx. Shoreline. Land adjacent to the water of an ocean, sea, lake, pond, river or tidal basin that is above the high-water mark at which a rotorcraft could be landed safely. This does not include land areas unsuitable for landing, such as vertical cliffs or land intermittently under water (refer to § 135.168). Additional information is available in 14 CFR part 136, § 136.1, i.e., "suitable for landing area for helicopters."

yy. Standard Operating Procedures (SOP). An established or prescribed method to be followed routinely for the performance of a designated operation or in a designated situation and is used to guide training to meet such contingencies.

zz. Suitable Offshore Heliport Structure. A heliport structure that can support the size and weight of the rotorcraft being operated where a safe landing can be made.

aaa. Supplemental Type Certificate (STC). A TC issued when an applicant has received approval to modify an aircraft from its original design.

bbb. Visual Flight Rules (VFR).

1-7. RELATED SOURCE MATERIAL. The following lists documents that are applicable to HAA operations.

a. ACs (current editions). ACs can be found on the FAA Web site at http://www.faa.gov/regulations_policies/advisory_circulars.

- AC 00-64, Air Medical Resource Management.
- AC 27-1, Certification of Normal Category Rotorcraft.
- AC 27-1B MG 6, Miscellaneous Guidance (MG) for Emergency Medical Service (EMS) Systems Installations.
- AC 29-2, Certification of Transport Category Rotorcraft.
- AC 91-21.1, Use of Portable Electronic Devices Aboard Aircraft.
- AC 91-32, Safety In and Around Helicopters.
- AC 120-27, Aircraft Weight and Balance Control.
- AC 120-49, Certification of Air Carriers.
- AC 120-51, Crew Resource Management Training.
- AC 120-92, Safety Management Systems (SMS).
- AC 120-96, Integration of Operation Control Centers into Helicopter Emergency Medical Services Operations.
- AC 135-5, Maintenance Program Approval for Carry-On Oxygen Equipment for Medical Purposes.
- AC 150/5390-2, Heliport Design.
- AC 150/5230-4, Aircraft Fuel Storage Handling Training and Dispensing on Airports.

b. Handbooks, Manuals, and Pamphlets (current editions). FAA handbooks can be found on the FAA Web site at http://www.faa.gov/regulations_policies/handbooks_manuals.

- FAA Order 8040.4, Safety Risk Management Policy.
- FAA-H-8083-21, Rotorcraft Flying Handbook.
- FAA-H-8261-1, Instrument Procedures Handbook.
- Airman's Information Manual (AIM).
- DOT/FAA/PM-86/45, Aeronautical Decision Making for Helicopter Pilots.
- DOT/FAA/DS-88/7, Risk Management for Air Ambulance Helicopter Operators.
- FAA FAASTeam Library, Flying in Flat Light and White Out Conditions.
- National EMS Pilots Association (NEMSPA), Preparing a Landing Zone. NEMSPA is located in Layton, UT 84041-9128, telephone (877) 668-0430.

c. Other:

(1) Helicopter Association International (HAI). HAI is located at 1920 Ballenger Avenue, Alexandria, VA 22314-2898, telephone (703) 683-4646. Check their Web site for other documents and links to resources, including their Fly Neighborly Guide.

(2) The National Fire Protection Association (NFPA) is located at 1 Batterymarch Park, Quincy, MA 02169-7471, telephone (617) 770-3000. They have many publications about fire protection. The 400 series may be the most helpful. For example, the current edition of NFPA 418, Standard for Heliports, has fire standards for heliports.

(3) Air Ambulance Guidelines published by both the U.S. Department of Transportation (DOT), National Highway Traffic Administration; and the American Medical Association, Commission on Emergency Medical Services.

(4) The National Association of Air Medical Communications Specialists (NAACS) is located at PO Box 19240, Topeka, KS 66619, telephone (877) 396-2227. Check their Web site for links to resources, including training courses.

(5) Special Airworthiness Information Bulletin (SAIB) SW-10-43, Non-Aviation Transmitters. (Includes, for example, 800 megahertz (MHz) radios used to communicate with hospitals.)

(6) Policy Letter (PL) ASW-2001-01, Certification Guidelines for Compliance to the Requirements for Electro-Magnetic Compatibility (EMC) Testing.

(7) DOT/FAA/AR-99/50, High-Intensity Radiated Fields (HIRF) Risk Analysis.

(8) FAA Technical Standard Order (TSO)-C194, Helicopter Terrain Awareness and Warning System (HTAWS).

(9) International Civil Aviation Organization (ICAO) Doc 9977 AN/489, Manual on Civil Aviation Jet Fuel Supply.

(10) RTCA Inc., DO-160, Environmental Conditions and Test Procedures for Airborne Equipment.

(11) RTCA Inc., DO-178B, Software Considerations in Airborne Systems and Equipment Certification.

(12) RTCA Inc., DO-254, Design Assurance Guidance for Airborne Electronic Hardware.

(13) RTCA Inc., DO-309, Minimum Operational Performance Standards (MOPS) for Helicopter Terrain Awareness and Warning System (HTAWS) Airborne Equipment.

(14) OpSpecs:

- A005, Exemptions and Deviations.
- A008, Operational Control.
- A010, Aviation Weather Information.
- A021, Helicopter Air Ambulance Operations.
- A050, Helicopter Night Vision Goggle Operations (HNVGO).
- A061, Use of Electronic Flight Bag.
- A096, Actual Passenger and Baggage Weight Program for All Aircraft.
- A097, Small Cabin Aircraft Passenger and Baggage Weight Program.
- D085, Aircraft Listing.

1-8. BACKGROUND. This AC focusses on the requirements and challenges faced by HAA operations and how these can be addressed through application of best practices which, when tailored to local and operational requirements and the appropriate scope and complexity of each organization, provide one way of many possible ways to assure safety and compliance with regulatory requirements within a HAA operation.

a. General. The typical HAA operation provides 24-hour local or regional on-call service from an operational base or multiple operational bases. Each base is assigned one or more helicopters and is staffed by one or more pilots and mechanics. A base may also be staffed by medical crew members (paramedics, EMTs, doctors, and nurses). If not, the helicopter should reposition to a trauma center or other location where medical personnel are available for assignment to support operational requirements.

b. Operational Control. An HAA operator should be organized to ensure the challenges imposed by the need to perform HAA-specific training, operations, equipment installation and maintenance and documentation are adequately addressed. Operational control over the aircraft, pilots and flight operations should remain within the operator's organization regardless of customer prioritization, inputs, tacit expectations and pressures.

c. HAA-Specific Equipment. HAA-specific equipment (such as HTAWS, Flight Data Monitoring System (FDMS), etc.) and training are required for HAA operations, starting on effective dates provided in the applicable regulations. Such equipment and training has been identified as beneficial for improvements in flight safety and operational efficiency.

d. Maintenance. Helicopters should be maintained and serviced with particular attention to scheduling and accomplishing major inspections and maintenance while recognizing and accommodating customer expectations. Problems are likely to arise if operators defer, then extend, required maintenance to meet operational availability requirements. While the importance of helicopter availability is recognized in the HAA best practices referred to in this AC, HAA operator management, along with a pervasive "safety culture," should ensure that deferral of unscheduled repairs or replacements are not unduly extended to coincide with previously scheduled preventative maintenance or inspection requirements.

e. OCCs. Regulations require an OCC to be staffed by one or more OCS by those operators with 10 or more HAAs. The FAA strongly encourages similar steps by other operators. Formal Risk Analysis (composed of risk assessment and mitigation processes, not previously required of HAA operations), must be implemented by all HAA operators per § 135.617. Operator risk analysis programs should be well documented and consistently applied to avoid over-extending aircraft or pilot capabilities. Attempting to accomplish HAA operational objectives, in the absence of well thought-out and documented operational risk analysis procedures and training, can result in misplaced priorities, second-order effects, and unintended consequences and could result in poor judgment or decisionmaking.

f. Best Practices. Appropriate HAA industry experience and strong commitment to safe operations has been identified as a best practice of effective management personnel. In particular, effective action to assure flight safety by the director of operations, the chief pilot and the director of maintenance have been seen as essential to the best practices contributing to safe operations. Equally essential are policies and procedures emphasizing professionalism among all employees from the top down.

CHAPTER 2. CERTIFICATION AND HAA-SPECIFIC CONSIDERATIONS

2-1. GENERAL. A helicopter air ambulance (HAA), Title 14 of the Code of Federal Regulations (14 CFR) part 135 operation, as authorized through the issue of Operations Specification (OpSpec) A021, Helicopter Air Ambulance Operations, is unique among other types of part 135 helicopter operations. Organizational challenges are significant. This is reflected in the requirements for such operators under the certification process. Part 135 certificate holders conducting HAA operations are subject to requirements beyond those observed by other certificate holders.

2-2. INITIAL PART 135 CERTIFICATION WITH HAA AUTHORIZATION. Prospective helicopter operators desiring to offer HAA operations as an air carrier in accordance with part 135 should refer to the current edition of Advisory Circular (AC) 120-49, Certification of Air Carriers, for methods and procedures to follow in achieving certification. A Federal Aviation Administration (FAA) Web site with information on the certification process is: http://www.faa.gov/licenses_certificates/airline_certification/

a. Certification Team (CT). The Flight Standards District Office (FSDO) located in the area where the applicant desires to locate its principal business office will assemble a CT. This CT will provide certification process guidance to the prospective certificate holder. It will evaluate the systems, procedures, training, and documentation (manuals, etc.) that the applicant has documented and submitted (or demonstrated) toward earning their air carrier certificate.

b. Additional Information. Further detail about authorization for HAA operations, in addition to achieving part 135 certification, is included in this AC chapter.

2-3. ADDING HAA AUTHORIZATION TO AN EXISTING PART 135 CERTIFICATE. Existing part 135 certificate holders may perform HAA operations after providing training, meeting regulatory requirements, implementing appropriate procedures and installing equipment (described in subsequent chapters of this AC). Following an application for authority to perform HAA operations, supported by demonstrations of capability, the operator may be issued, by the FAA, the appropriate OpSpecs, including A021, Helicopter Air Ambulance Operations. The approving authority for the issuance of these OpSpecs will be the principal inspectors (PI) assigned to that certificate.

2-4. REGULATORY OPERATIONAL CONSIDERATIONS. HAA operators are subject to regulatory operational requirements above those associated with other part 135 operations. These are outlined in Chapter 3 of this AC. In addition, this AC will identify HAA industry best practices applicable to operational issues.

a. Part 135, § 135.603, Pilot Qualifications. Part 135 certificate holders conducting HAA operations are subject to pilot qualifications requirements in addition to those required of such certificate holders not engaged in such operations. Pilots employed in HAA operations must hold a rotary wing (RW) instrument rating or an airline transport pilot (ATP) certificate in accordance with § 135.603. This requirement becomes effective on April 24, 2017.

b. Section 135.609, Local Flying Area(s) (LFA) Familiarity Verifications. An examination of familiarity with a LFA is required to be completed and documented in a

12-month period before a pilot can use the lower weather minimums associated with the LFA. This examination of familiarity with a LFA may be through other means than a flight check. However, a record of all such examinations, regardless of format, must be retained for each pilot and each LFA assigned (refer to § 135.609). In this AC, see paragraph 3-5 for LFA operational considerations, paragraph 4-2 for LFA training implementation details, and paragraph 7-2 for LFA examination documentation requirements.

c. Sections 135.611 and 135.613, Instrument Flight Rules (IFR) Procedure Documentation. It is recommended that part 135 certificate holders conducting HAA IFR operations document procedures associated with point in space (PinS) approaches and associated Obstacle Departure Procedure (ODP). (Refer to §§ 135.611 and 135.613.)

d. Section 135.615, Visual Flight Rules (VFR) Flight Planning Documentation. Procedures for VFR flight planning must be documented by part 135 certificate holders conducting HAA operations in accordance with the provisions of § 135.615.

e. Section 135.617, Preflight Risk Analysis. An FAA-approved preflight risk analysis program must be established by each HAA operator and documented in its operational manual (or other documentation). In accordance with the provisions of § 135.617(d), part 135 certificate holders conducting HAA operations are required to use and retain preflight risk analysis worksheets. Preflight risk analysis worksheets are completed by the pilot and are reviewed and confirmed by the Operations Control Specialists (OCS) in compliance with § 135.617 if applicable. These worksheets are retained for 90 days in compliance with §§ 135.617 and 135.619. The procedure itself is outlined in paragraph 3-4 and Appendix A, which also includes examples of preflight risk analysis worksheets.

2-5. TRAINING CONSIDERATIONS. HAA operators are subject to additional training requirements above those associated with other part 135 operations. These training requirements will be outlined in Chapter 4. In addition, this AC will identify HAA industry best practices applicable to training, including providing examples of curriculum outlines and checklists as appendices.

2-6. EQUIPMENT CONSIDERATIONS. Part 135 certificate holders conducting HAA operations will utilize task-specific equipment associated with medical transport. An applicant should identify, in their initial application, any specialized equipment that may be used in their HAA operations. This equipment should include items required by regulations such as a Helicopter Terrain Awareness and Warning System (HTAWS) and a radio altimeter. By April 23, 2018, helicopters must equip Flight Data Monitoring Systems (FDMS). It may include a Night Vision Imaging System (NVIS) installation and other equipment fitted to bring each helicopter to a desired aeromedical configuration. Helicopters to be used in HAA operations are evaluated by FAA PIs.

2-7. INSPECTION AND MAINTENANCE CONSIDERATIONS. HAA operators should consider inspection and maintenance issues beyond those associated with other part 135 operations. This includes inspecting and maintaining equipment added for HAA operations. This equipment increases maintenance complexity and introduces second-order complications. These complications may include NVIS compatibility, electromagnetic compatibility (EMC)

verification, heat shielding, fire resistance, mechanical integrity of mounting, crashworthiness and infection control procedures. Maintenance hours and cost burdens will increase because of the need to remove and replace complex on-board systems, sealed interior panels, etc., when required to access aircraft systems for inspection, maintenance and repair. The operator should factor these considerations into both routine and unscheduled maintenance decisionmaking. For example, it is not acceptable to apply for multiple extensions on deferrals of required maintenance for minimum equipment list (MEL) items solely due to the cost burden associated with gaining access to make repairs. Be on guard against such practices. Standard MEL deferral decisionmaking should be consistently applied.

> **NOTE: Reference materials providing further guidance include: AC 27-1B MG 6, Miscellaneous Guidance (MG) for Emergency Medical Service (EMS) Systems Installations.**

2-8. DOCUMENTATION AND RECORDKEEPING CONSIDERATIONS. All HAA operators are required to document preflight risk analysis and VFR flight planning procedures. In addition to the manual requirements imposed by § 135.21, it is recommended that each certificate holder conducting HAA operations, including single-pilot and basic operators, compile and maintain manuals reflecting the implementation of HAA best practices identified in this AC. Documentation and recordkeeping requirements associated with HAA operations beyond those normally required of part 135 operators are described in Chapter 7 of this AC.

CHAPTER 3. OPERATIONS

3-1. GENERAL. This chapter outlines recommendations regarding the conduct of Title 14 of the Code of Federal Regulations (14 CFR) part 135 helicopter air ambulance (HAA) operations.

3-2. OPERATIONAL CONTROL, FLIGHT LOCATING, AND FLIGHT FOLLOWING DUTIES AND RESPONSIBILITIES. Regardless of the size and complexity of the operation, the operator is responsible for maintaining operational control, accomplishing flight locating and supporting the pilot during preflight planning, risk analysis, and en route by providing information and constructive input which would aid the pilot in effective decisionmaking. Smaller operations may accomplish this through direct communication between the pilot and the management person to whom the authority to provide a flight authorization has been delegated. Larger operations may accomplish the same objective through pilot communication and discussion with a trained Operations Control Specialist (OCS).

a. Operational Control. Only those individuals authorized by name in an operator's operations specification (OpSpec) may exercise operational control. While operational control may be delegated to certain certificate holder personnel, it must never be delegated to customer hospitals or external emergency medical services (EMS) agencies.

b. Duties and Responsibilities. The pilot in command (PIC), by regulation, is the final authority for the operation of any HAA flight. It is an HAA industry best practice that a PIC may not "self-launch." Operators should establish procedures for coordination between the pilot and OCS, or other person authorized to exercise operational control, to evaluate flight risk analyses to ensure risk is mitigated to the extent possible or a flight request is declined due to unacceptable risk. While "three to go, one to say no" is a good practice (with the three being the PIC and two medical crew members, and the one being any one of the three), it is essential that no external pressure "to go" is applied to the pilot during the decisionmaking process.

> **NOTE: A PIC's decision to decline, cancel, divert or terminate a flight overrides any decision by any and all other parties to accept or continue a flight.**

c. Flight Authorization and Flight Locating Procedures. Regardless of whether or not an operator uses an Operations Control Center (OCC), flight authorization and flight locating procedures should be well-considered and thoroughly documented to support training and operations. For those operators with an OCC, the description of the duties and responsibilities of OCSs and an explanation of their duty times in the current edition of Advisory Circular (AC) 120-96, Integration of Operations Control Centers into Helicopter Emergency Medical Services Operations, should amplify the above. In addition, the rule describing OCS training part 135, § 135.619(f) is an excellent guide to the subject matter considerations involved in issuing a flight authorization and with reacting to flight locating adverse outcomes. The certificate holder is required by regulation to use flight locating procedures (refer to § 135.79), unless a Federal Aviation Administration (FAA) flight plan is filed and activated.

d. Flight Following.

(1) Flight Following Recommendations. Flight following is distinguished from flight locating. Flight locating is required for HAA operations unless an FAA flight plan is filed and activated. While § 135.619 requires an OCC to monitor the progress of a flight, for smaller operators (ten or less HAAs), it is a good practice to employ flight following.

(2) Flight Following Connectivity. Flight following should maintain voice communications with helicopter pilots during HAA operations. The operator may wish to consider employing satellite/Global Positioning System (GPS) tracking for flight following tasks as a supplement or substitute for voice radio connectivity.

(3) Flight Following Latency. It is recommended that a position and status report be made, at most, every 15 (in flight) to 45 (on ground) minutes. If communication is lost, the aircraft may be considered missing after failing to provide sequential routine position reports (usually two reports). The longer the time between position reports, the greater the radius of uncertainty of the missing helicopter's location. The operator should also consider employing satellite/GPS tracking for flight following tasks as a substitute for voice radio connectivity.

e. Flight Following and Accident Incident Plan/Post-Accident Incident Plan (AIP/PAIP). Each OCC or other flight following office should have access to the operator's AIP/PAIP. The plan should be reviewed and updated annually or more frequently as needed.

(1) Information in the AIP/PAIP defines and provides direction for emergency response procedures that should be used as a basis for training or for reference in the event of a mishap, accident or other emergency. The AIP/PAIP establishes standard emergency response procedures that OCSs or flight followers will carry out in all cases when an aircraft meets operator-defined criteria of being overdue or has been involved in an incident or accident.

(2) The AIP/PAIP and any other emergency response plans and guides may be formatted in a variety of ways, provided the user (that is, the individual making the initial response to the emergency) can easily determine where to find guidance for a situation and then follow a generic checklist of actions to be taken for that situation. An addendum to the main response plan should be available for every satellite base. Each local addendum should list direct-dial phone numbers for the satellite base manager, local first responder and 911 dispatch organizations, local air traffic control (ATC) and local FAA offices.

f. Communications Personnel and Procedures. Chapter 6 of this AC provides recommendations to assist HAA operators with best practices for implementing OCCs and operational control procedures.

(1) Large HAA operators have developed OCCs to maintain operational control. While there is a regulatory requirement (§ 135.619) for operators with 10 or more HAAs to have OCCs, smaller operators should consider the benefits that best practices have shown can be implemented on a scalable level to meet the needs of smaller operators.

(2) Operators without an OCC, and large operators may find it advantageous to supplement their Operational Control personnel through the addition of Communications

Specialist Staff. If this is the case, the Operator must train and qualify their Communications Specialists to the extent their duties and responsibilities reflect delegated Operational Control tasks. For example, if a Communication Specialist is responsible for performing flight locating duties via radio or other communications process, and to receive and offer the operator flight requests for HAA operations their training should include company policy and procedures for such activity.

(3) A communications specialist may be an employee of the HAA operator, a hospital (i.e., a hospital communications specialist) or a local public safety agency (i.e., a 911 dispatch operator. If communications specialist duties are delegated beyond certificate-holder personnel, such as to a hospital or ambulance dispatch center, those individuals serving in that capacity must be trained by the certificate holder and such training programs must be documented.

(4) The primary function of the communications specialist is to support HAA operations by relaying coordination information and situational awareness information among the flightcrew, hospital, and on-scene personnel and other involved organizations and individuals. Providing and receiving in-flight updates and post-flight debriefs to flightcrews have been identified as part of their recommended functions.

(5) HAA best practices suggest that the responsibilities of communications specialists should include ascertaining, from those requesting HAA services, whether another HAA operator has previously declined to carry out a particular flight and, if so, for what reason. The response received should be conveyed to the pilot performing the Risk Analysis in accordance with § 135.617. The personnel that carry out this function may or may not be the same as those who carry out in-flight connectivity and flight locating functions during HAA operations.

(6) Depending on the size and nature of HAA operations, different communications specialist functions may be split between multiple individuals (who may also carry out other functions) or concentrated in one or more communications specialists.

(7) Communications specialist duties may include flight following. Best practices suggest that an HAA operator's communications system should provide reliable connectivity with HAAs in flight and on the ground, enable flight locating (required by regulation for some operators and recommended for all others) and ensure that medical personnel and pilot(s) can communicate with recipients such as hospitals and ground personnel at a Landing Zone (LZ). Some rural hospitals may not have communications capability other than by phone. Communications specialist personnel may be required to act as an intermediary.

(8) In all cases, when communications specialists perform an OCS duty included in § 135.619(a)(1-4), the communication specialist is subject to training and checking in those subjects that support the duty performed and must be trained in the limit of authority delegated to them.

3-3. VISUAL FLIGHT RULES (VFR)/INSTRUMENT FLIGHT RULES (IFR) FLIGHT PLANNING AND WEATHER MINIMUMS.

a. Flight Planning (refer to §§ 135.613 and 135.615).

(1) HAA VFR flight planning must take into consideration factors including the determination of highest obstacles and minimum cruising altitudes along planned routes as well as contingencies such as deviations due to medical necessity, dynamic weather and changes to the planned flight. The procedures defining these planning methods must be documented. (Refer to § 135.615 for regulatory requirements.)

(2) IFR/VFR Procedures. For operators with IFR authorization, procedures for transitioning from IFR to VFR on approach or from VFR to IFR on departure are required to be documented.

b. Approach Procedures Minimums (refer to §§ 135.609, 135.611 and 135.613).

(1) When executing Point in Space (PinS) Copter approaches that include a "proceed visually" transition, the flight will remain under IFR from the missed approach point (MAP) to a served heliport and the transition must be conducted in accordance with the ceiling and visibility limitations published in the PinS Copter Instrument Approach Procedure (IAP).

(2) When executing PinS Copter approaches that include a "proceed VFR" segment between the MAP and a served heliport, flights must be conducted in accordance with the ceiling and visibility limitations published in § 135.613(a).

(3) When accessing a heliport near an airport served by an IAP, the pilot may execute a published IAP to an airport which is not the intended landing site, and then break off that published approach after visually acquiring the airport served by the approach and then proceed to a landing area other than the airport to which the approach was conducted. The pilot may accomplish this only under VFR weather minimums in accordance with § 135.613(a) or under VFR as appropriate to the class of airspace involved and in accordance with ATC clearances. (The airspace between the protected area surrounding the approach to the airport and the intended landing area located nearby may not be surveyed and obstructions may exist between the airspace protected for the airport served by the IAP and the intended landing site.)

c. Departure Procedures Minimums (refer to §§ 135.609 and 135.613).

(1) HAA Helicopters may depart on an IFR clearance from the surface, at heliports that are not served by weather reporting, providing the heliport is served by a departure procedure (Standard Instrument Departure (SID) or Obstacle Departure Procedure (ODP)) containing ODP and takeoff minimums, and the pilot determines the weather at the departure point meets or exceeds the published takeoff minimums. The flight may depart and proceed visually in accordance with the instructions contained in the DP.

(2) When departing VFR from heliports with the intent of acquiring an IFR clearance at or before reaching a predetermined point (usually the Initial Departure Fix (IDF) not more than 3 nautical miles (NM) from the departure point, the flight must be conducted in accordance with the DP instructions and the ceiling and visibility limitations contained in § 135.613)(a). If the distance between the departure point and the IDF exceeds 3 NM, the flight must be conducted in accordance with the VFR ceiling and visibility minimums for the class of airspace involved. The operator should document procedures for transitioning from IFR to VFR on approach or from VFR to IFR on departure.

(3) If the departure involves a VFR to IFR transition and does not meet the requirements of § 135.613(b)(1), there is no departure procedure, and/or the IDF is more than 3 NM from the point of liftoff, the VFR weather minimums required by the class of airspace apply. If the flight is within Class G, airspace, refer to § 135.609, if within Class B, C, D, or E airspace, refer to § 135.205.

(4) These regulations do not restrict or prohibit "diverse departures" from airports from which IFR departures can be made in accordance with 14 CFR part 97. These are departures from airports with IAPs that have had an obstacle analysis conducted and from which it was determined IFR departures can be performed safely without a published ODP or SID.

(5) An IFR clearance and departure with "proceed visually" text is not considered a VFR maneuver and is not subject to § 135.609 limitations unless the pilot is instructed by ATC to maintain VFR. For this type departure, the weather must meet or exceed either the published "takeoff minimums" contained in the DP, or the restrictions in contained in § 135.613 or in § 135.609, as applicable.

d. Flight Into Locations Without Weather Reporting (refer to § 135.611(a)(3)). In accordance with the provisions of § 135.611(a)(3), the PIC may assess the weather at a departure point where weather reporting is not provided. This is a process where the PIC applies his own professional judgment to determine the weather conditions. The pilot may be assisted by access to enhanced situational awareness provided by the OCC or other aviation or non-aviation weather sources. (See Chapter 6 of this AC and AC 120-96 for more information.)

(1) Based on this weather assessment, the PIC may:

- Takeoff when the observed ceiling and visibility is greater than the weather minimums as published in a departure procedure; or
- Takeoff when a documented departure procedure is not available and when the observed weather is greater than the higher minimum ceiling and visibility limitations required by § 135.609, or for the Class B, D, or E airspace overlying the departure point, as applicable.

(2) The FAA intends to permit HAA flights to enter the National Airspace System (NAS) under IFR when visibilities and ceilings are below VFR minimums, based on the pilot's weather observations, thus increasing the safety of the flight. This rule permits HAAs to depart heliports with a published IAP and departure procedure with no reported weather under IFR, rather than forcing them to depart under VFR, which in low ceiling and visibility conditions is more hazardous.

e. Weather Minimums (refer to § 135.609). Section 135.609 specifies HAA minimums for Class G airspace. HAA operations use higher ceiling and visibility minimums in uncontrolled airspace in uncontrolled airspace than is required for conventional part 135 operations. Each HAA base may establish one or more local flying areas (LFA) where lower minimums may be used. See paragraph 3-5 of this AC on LFAs.

3-4. PREFLIGHT RISK ANALYSIS (refer to § 135.617). Preflight risk analysis is a key subject of this AC. It is discussed in chapters 3, 6, and Appendix A. This AC provides guidance for implementation of regulatory requirements. Each HAA operator, regardless of size, must design, develop, document and implement an FAA-approved preflight risk analysis process. Only processes that have been documented and have been the subject of training, meet regulatory requirements. (Refer to § 135.617.)

a. Risk Analysis Steps. Risk analysis includes the following steps:

(1) Risk identification. What are the risks and their importance in quantitative terms?

(2) Mitigation. What changes or approaches reduce the effect of risks?

(3) Calculation of Residual Risks. What risk remains after mitigation?

(4) Management Review. Elevation of higher risk assessment to appropriate management levels for concurrence.

b. Risk Analysis. Risk assessment is a key element of risk analysis. Its process documentation should identify risk factors the HAA operator may consider. This assessment should consider not only the primary intended flight operation but also all contingencies that can reasonably be foreseen. The PIC does not have to perform a new risk assessment prior to a change in destinations. As part of risk assessment, these factors are quantified. The operator should assign to each risk factor an appropriate value reflecting both the likelihood of occurrence and severity of outcome. Combining the value associated with each risk factor will yield a total risk value. An example of this is provided in Appendix A.

c. Flight Authorization. Each HAA operator must document procedures for obtaining and documenting approval by management personnel to authorize a flight when a single or cumulative risk exceeds a level predetermined by the operator. If this value exceeds that predetermined level, it will require management approval or preclude operations. After all risks are identified and risk control strategies and their effects are considered, an informed go/no-go decision can be made. The effect of risk assessment on mitigation strategies and restrictions on acceptable risks must be documented.

d. Risk Assessment Quantifies at Least the Following Risk Factors.

(1) Aircraft Capabilities, Flight Route and Landing Site Considerations. This includes performance, fuel required, resulting useful load, environmental factors and their effect on performance with all engines operating and, as applicable, with one engine inoperative as well as obstacles and terrain along the planned route of flight and LZ conditions. In-flight changes to routes or destinations do not necessarily require a full risk analysis, provided these options or contingencies were considered in the original risk analysis of the flight operation that was conducted prior to the flight operation was initiated. The original risk analysis should be updated, considering factors which have changed, such as: fuel required, fatigue, airworthiness, and dynamic weather conditions, etc.

(2) Current and Forecast Weather. This includes ceiling, visibility, precipitation, surface winds, winds aloft, potential for ground fog (especially for off-airport scene response operations), and severe weather such as thunderstorms and icing. These factors should be considered for the departure point, en route, and primary destination and contingency routes/diversion landing facilities.

(3) Human Factors. This includes sources of stress such as health, fatigue, circadian effects, flight difficulty, operational complexity and potentially distracting life events. All these are among the many potential contributors to human failure. Human factors considerations should include information such as pilot experience level and operation-specific hazards that also reflect environmental factors.

(4) Declined HAA Flight Requests. The operator must establish a procedure for determining whether another HAA operator has declined the flight request under consideration and if so, for what reason (weather, maintenance, etc.). If applicable, the reason for the declined flight must be factored into the required risk assessment process, i.e., do not include a declined flight due to a maintenance issue or pilot not available. This could be as simple as asking the requestor whether or not this specific flight request has previously been made and declined and why.

(5) Risk Determined Independent of Patient Condition. It should be assumed that HAA operators and personnel are dedicated to making every flight requested, providing the level of risk is acceptable. Best practices in the industry indicate the medical condition of a patient should not be considered in the risk analysis process and that the PIC should not be briefed on this factor in advance of decisionmaking.

e. Mitigation. Identified risks may be mitigated by changing how a proposed HAA flight is conducted. The operator must develop strategies and procedures for controlling risks imposed by identified hazards. For examples of mitigation, refer to Appendix A.

f. Calculation of Residual Risk. After risk is analyzed and quantified and then mitigated, the degree of residual risk is assessed. Residual risk is the safety risk that exists after all controls have been implemented or exhausted and verified.

g. Elevation of Higher Risk Analysis to Appropriate Management. An HAA operator is required to define risk-based flight authorization limits based upon a quantitative assessment of each specific flight operation. Higher risk assessments are referred to an appropriate manager with operations control authority.

h. Reconsideration of Flight Authorization. Material changes in any of the major risk factors considered in the decisionmaking process should trigger reconsideration of flight authorization. This especially applies to deterioration in weather or other environmental conditions or deterioration of patient condition resulting in an unplanned diversion.

3-5. LFAs (refer to § 135.609).

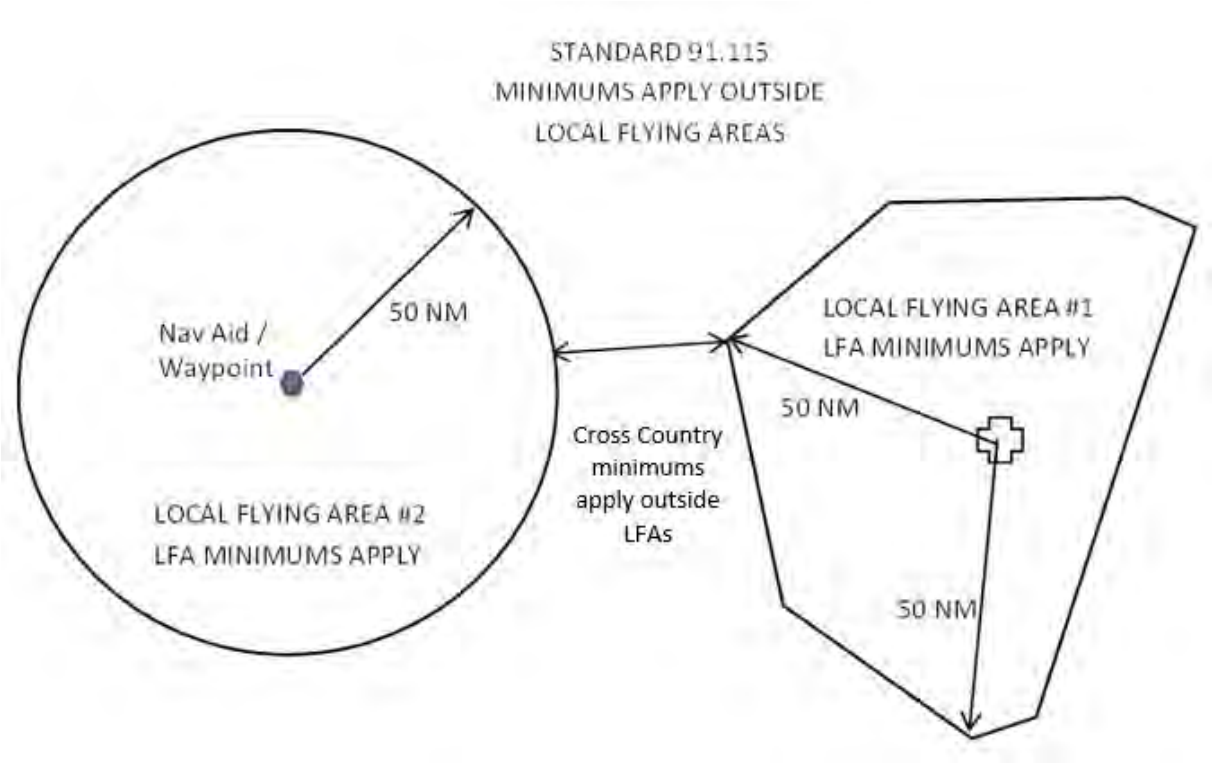
a. Establishing LFAs.

(1) Each HAA base may establish one or more LFA. A LFA is considered a defined or bounded area within which a HAA pilot has demonstrated detailed local knowledge and within which lower Class G weather minimums may be applicable.

(2) A LFA may be symmetrical, such as an area encompassed by a fixed radius from a point designated by the operator or, alternatively, it may be asymmetrical, using landmarks and geographical features to bound the area. In any case, a designated LFA should not exceed 50 NM in any direction from the designated location.

(3) LFA(s) need not be contiguous. There is no requirement that a LFA for a particular base of operations consist of only one defined area. For example, if an operator that conducts HAA operations in a particular metropolitan area, but often transports patients to a regional trauma center outside that area, may choose to develop an additional LFA for assigned pilots to use when operating near the trauma center. While operating in-between LFAs, cross-country minimums would apply.

FIGURE 3-1. EXAMPLE OF LOCAL FLYING AREA(S) AND WHERE CROSS-COUNTRY MINIMUMS APPLY



b. References. References to define a LFA may include:

(1) A specific radius from a point (if easily identified using installed operational avionics).

(2) Bounding natural and constructed references (rivers, shorelines, roads, railroads, etc.).

(3) Governmental boundaries, if easily identified from the air.

(4) By describing an area bounded by natural, constructed or aeronautical reference points (shoreline points, islands, valleys, buildings, airports, very high frequency (VHF) omnidirectional range station (VOR), GPS waypoints, etc.).

(5) Any other reasonable description of an area that may be easily applied by a flightcrew, such as a predetermined route or system of routes.

c. Effects of LFA on Minimum Acceptable Weather Conditions. Establishment of a LFA allows for the use of lower weather minimums as specified in § 135.609. This is only available for use by pilots that have demonstrated LFA familiarity.

d. Demonstration of LFA Familiarity. A pilot must demonstrate a level of familiarity with a LFA by passing an examination given by the certificate holder within the preceding 12 calendar-months prior to using a LFA's local area weather minimums as specified in § 135.609. This examination may be oral or written and may be part of a line check consisted under § 135.299. The manner of the examination must be described in the operator's training program. The grace provisions of § 135.301 apply. This examination should include at least the following:

(1) Terrain features and LFA boundaries.

(2) Prominent obstructions including areas of obstruction.

(3) Minimum safe altitudes in the area.

(4) Weather producers (such as industrial areas, fog-prone areas, etc.).

(5) Areas of poor surface lighting and the effects of seasonal and other changes on surface lighting, as applicable to the area.

(6) Airspace control/air traffic facilities.

(7) Radar and communications coverage, including minimum altitudes for radar service and communications with air traffic facilities and company communications facilities.

(8) Airports/heliports/fuel sources, including night availability; available instrument approaches.

(9) Predominant air traffic flows.

(10) Landmarks and constructed features.

(11) Facility-specific information such as flight locating, dispatch and communications.

(12) Any emergency considerations specific to the area.

NOTE: A record of the examination must be kept in accordance with records retention requirements.

3-6. HAZARDS TO OPERATIONS: IDENTIFICATION AND MITIGATION.

a. Hazard Map. One (or more) hazard maps should be developed. While hazard maps should be developed to cover the entirety of each LFA, such maps may be more extensive than a LFA. The map should be reviewed and updated periodically or as new information becomes available. It should be displayed in a conspicuous location for pilots to review. All potential hazards should be annotated. Power lines, towers and tall structures in the vicinity of designated LZs are particularly important. A system to identify and depict newly-added hazards and to ensure pilots are aware of them should be developed. VFR/IFR transition corridors and preferred routes should appear on hazard maps. Recommended practices include treating the hazard map as a living document, updated by the use of grease pencils or map pins with appropriate notes or captions. Transient hazards (including those created by changing light and visibility or recorded in Notices to Airmen (NOTAM)) should appear on the map with their applicable times.

b. Flight Controls. Leaving the flight controls of a helicopter while rotors are turning is a potentially hazardous situation that may be encountered in HAA operations. While current regulations do not prohibit the pilot from leaving the controls while the helicopter is operating, HAA operators are urged to include procedures for accomplishing this safely in their documented operational procedures and training.

c. Magnetic Resonance Imagery (MRI) Systems. Caution should be used in vicinity of MRI systems. Interference from MRI systems may cause fluctuations in compass accuracy and in instruments for up to 30 minutes and render them unusable. MRI systems may also cause interference with full-authority digital electronic control (FADEC)-equipped aircraft.

3-7. HAA WEIGHT AND BALANCE (W&B) CONSIDERATIONS.

Because of the need for specialized equipment, medical personnel and patients to be carried from a wide range of locations and in a wide range of conditions, W&B considerations for HAA operators differ from those of other part 135 operators. Most HAA helicopters have strictly limited payloads due to installed equipment configurations. This AC identifies requirements and best practices considerations.

a. W&B Requirements of HAA Operators. Certificate holders should develop a W&B program as illustrated in OpSpecs A096/A097, using actual weights for crewmembers, medical personnel and carryon medical equipment (not permanently installed on the aircraft), and only relying on solicited or estimated weights for patients, regardless of the size of the helicopter. Certain medical equipment (e.g., isolettes and balloon pumps that are removed and replaced as needed) may not technically be installed but rather should be considered similar to carry-on baggage, be properly secured, and counted toward payload.

b. W&B Programs of HAA Operators. An approved W&B program is required to be documented and listed in the certificate holder's General Operations Manual (GOM), if applicable. It will be approved in the operator's OpSpecs. See guidance for OpSpecs A096/A097 for more details. A W&B control system may include the following:

(1) An index-type W&B program that makes use of actual weights for crew members and equipment and average weights for patients may be established in accordance with the appropriate OpSpec (either A096 or A097) and the current edition of AC 120-27, Aircraft Weight and Balance Control. Company manuals should contain procedures for using, managing and updating W&B data. A loading schedule should be prepared composed of graphs and tables based on pertinent data for use in loading that particular helicopter in a rapid manner for HAA operations.

(2) Best practices in the industry are that operators prepare W&B for multiple configurations of each helicopter in terms of differences in occupants and equipment, especially common configurations (e.g., one or two pilots, one or two medical personnel, one or two patients, large carry-on equipment, balloon pumps, fuel in the most critical center of gravity (CG) locations, training configuration, etc.)

(3) Operators must amend individual helicopter W&B documentation when equipment is removed or replaced. If medical equipment is modified or medical supplies are upgraded, the operator must ensure the resulting changes in weight and location inside the helicopter are reflected in the W&B documentation required by the OpSpecs.

3-8. HELIPORTS/LZs. HAA operators should establish procedures for conducting airborne and ground reconnaissance of all types of heliports/landing zones. This is especially important for off-airport LZs or heliports not used on a routine basis.

a. LZ Criteria. Criteria should be established, documented and included in training programs to assess each heliport/LZ on a continuing basis prior to use. The operator should document criteria for LZ selection. These criteria should include size, obstructions, lighting, surfaces, wires and methods to determine wind direction, etc. A reporting system for unsatisfactory or dangerous conditions and a continuing LZ evaluation program should be part of HAA operations

b. Heliports. When part 135 HAA operations are conducted from established heliports, those heliports should meet the criteria established in the current edition of AC 150/5390-2, Heliport Design, to the maximum extent possible.

c. Approach/Departure. For operations over congested areas, ingress/egress routes to heliports or "scene" locations may have to be modified to adhere to best safety practices. Whenever possible, helicopter operations should include the best practices of "flying neighborly," as described in the Helicopter Association International (HAI) Fly Neighborly Guide.

d. Ground Security. Best practices suggest that an off-airport or heliport, LZ or "scene" location should be secured against incursions and other hazards by law enforcement or firefighters.

e. LZ Listing. HAA operators should maintain a listing of routinely used off-airport LZs containing pertinent information. This listing should be available to HAA pilots. A system should be established to familiarize pilots with all heliport/LZs serviced by a hospital or certificate holder. A method considered acceptable would be using photographs, drawings and

other descriptive means to identify each heliport/LZs with emphasis on timely recording of any obstructions. The site evaluation should include the following:

(1) Identification and/or removal of obstructions;

(2) Assessment of area lighting/transient light conditions;

(3) Awareness of helicopter ingress/egress limitations; and

(4) A reporting system for unsatisfactory or dangerous conditions.

3-9. OPERATIONS UNDER SPECIAL CONDITIONS.

a. Inadvertent Instrument Meteorological Conditions (IIMC).

(1) Operators should develop and document operational procedures for avoiding flight into IIMC along with procedures to be followed after IIMC is encountered. Both of these sets of procedures should include operations in an ATC radar environment as well as IIMC in isolated areas or a non-radar environment.

(2) Avoidance of entry into IIMC should be emphasized in HAA training and operations. A thorough weather briefing, proper analysis of weather (especially that potentially affecting in-flight route changes) and incorporation of adverse weather conditions into risk analysis should help prevent encounters with IIMC. HAA-appropriate training for IIMC flight is discussed in paragraph 4-3 of this AC.

(3) Some best practices for avoiding flight into IIMC include procedures that specify HAA pilots execute a contingency plan whenever speed or course adjustment is required due to deteriorating weather conditions. This contingency plan could be to execute a course reversal to leave the area of deteriorating weather or the execution of a precautionary landing to avoid entering IIMC.

(4) Procedures to be followed by a HAA pilot after entering IIMC should be developed and documented. These procedures should be tailored to each HAA base or operating area. For example, a HAA base that routinely operates near airports with an ATC control facility might establish procedures for contacting ATC and receiving radar vectors to visual meteorological conditions (VMC) or for an instrument approach. A base that operates in areas without local approach control or radar services might pre-designate airports in their service area where IAPs are available. Approach procedure information for those airports could then be kept in the cockpit, readily available should the need arise.

(5) HAA operators may request the use of a discrete transponder code from a local air traffic facility for use when conducting HAA operations in its area of responsibility. This would provide positive identification during an HAA flight.

(6) Operators are also encouraged to meet with local ATC facility personnel to formulate and coordinate instrument meteorological conditions (IMC) “emergency escape plans

and procedures" for participating HAA aircraft. These plans and procedures may be established with a letter of agreement (LOA) between an operator and its local air traffic facility.

(7) In the event IMC is inadvertently encountered, weather observations and forecasts assessed during the timely performance of preflight planning and the risk analysis process did not, in the pilot's judgment, indicate that an IIMC event was likely, and the pilot subsequently performs an FAA accepted IIMC emergency recovery procedure, FAA personnel are discouraged from conducting enforcement against the pilot or the operator.

NOTE: IIMC avoidance and recovery training should in no way be construed as authorizing or condoning actual IMC flights without meeting IFR requirements.

b. Night Operations.

(1) A PIC must meet the requirements of 14 CFR part 61 and should complete the certificate holder's night training before conducting any night operations. A certificate holder should develop and document procedures for maintaining night proficiency in HAA operations. Pilots must be capable of meeting night recency of flight requirements to fly with or without night vision goggles (NVG). NVG recency of flight experience is defined in part 61, § 61.57(f).

(2) Night landings at unimproved sites, authorized by OpSpec A021, are permitted with adequate and appropriate lighting for the pilot to identify the landing site and surrounding hazards. Such lighting must be compatible with the Night Vision Imaging System (NVIS) if authorized and used.

NOTE: "Adequate" lighting allows a helicopter pilot to conduct a safe approach and landing during conditions of darkness while avoiding terrain and obstacles. The source of this lighting may be on the helicopter or on the surface and includes the possibility of vehicle-mounted lights being used to illuminate a landing site. Pyrotechnic road hazard flares are not recommended for illumination or marking a landing site.

c. Overwater Operations.

(1) Preflight passenger briefings for overwater flight must instruct on use of regulation-compliant life preservers and emergency exits. See the definitions in paragraph 1-6 for autorotational distance, shoreline, or suitable offshore heliport structure. (Refer to §§ 135.117, 135.167, and 135.168.)

(2) Best practices suggest that passengers be briefed anytime there is overwater flight although the regulations address only flights beyond autorotational distance.

d. Flat Light, Whiteout and Brownout. After April 22, 2015, in accordance with the requirements of § 135.293(h), all rotorcraft pilots must be tested on procedures for aircraft handling in flat light, whiteout and brownout conditions, including methods for recognizing and avoiding those conditions. HAA operators are susceptible to all of these conditions due to the nature of off-airport landings and operating in remote environments. These following are not

intended to be scientific explanations, but serve as operational definitions suitable for use by HAA operators. These terms should not be used interchangeably.

(1) Flat Light. Flat light is an optical condition, also known as sector or partial whiteout. It is not as severe as whiteout but this condition causes pilots to lose depth-of-field and vertical orientation. Flat light conditions are usually the result of overcast skies over snow or ice fields, inhibiting visual reference. Such conditions can occur anywhere in the world, primarily in snow-covered areas but they can also occur in dust, sand, mud flats or on glassy water. Flat light can completely obscure features of the terrain, creating an inability to distinguish distances and closure rates. As a result of this reflected light, it can give pilots the illusion of ascending or descending when actually flying level. However, with good judgment and proper training and planning, it is possible to safely operate aircraft in flat light conditions.

(2) Self-Induced Whiteout/Brownout. This effect typically occurs when a helicopter takes off or lands on a dusty or snow-covered area. The rotor downwash picks up particles and re-circulates them through the rotor system. The effect can vary in intensity depending upon the amount of light on the surface. This phenomenon can happen on the sunniest, brightest day with good contrast everywhere. However, when it happens, there can be a complete loss of visual clues. If the pilot has not prepared for this immediate loss of visibility, the results can be disastrous.

(3) Some resources that HAA operators have available to assist with training in these conditions include:

- Airman's Information Manual, paragraph 7-5-13; and
- FAA FAASTeam Library, Flying in Flat Light and White Out Conditions.

e. Operations Involving Multiple Aircraft—General. HAA operator service areas often overlap other HAA operator service areas. Standardized procedures can enhance the safety of operating multiple helicopters at heliports, LZs and hospitals. Communication is critical to successful operations and maintaining orderly separation and coordination between helicopters, ground units and communication centers. HAA operators should establish joint operating procedures and provide them to related agencies.

f. Recommended Multi-Aircraft Landing Zone Procedures. Based on existing industry conventions and material in the AIM, best practices identified include: The first helicopter to arrive on−scene should establish communications with an on-scene ground unit when at least 10 NMs from the LZ to receive a LZ briefing and to provide incident command with the number of helicopters that can be expected. An attempt should be made to contact other helicopters on VHF communications frequency 123.025 megahertz (MHz) to pass on to them pertinent LZ information and the ground unit's frequency. Subsequent helicopters arriving on-scene should establish communications on 123.025 MHz at least 10 NMs from the LZ. After establishing contact on 123.025 MHz, they should contact the ground unit for additional information. All helicopters should monitor 123.025 MHz at all times.

(1) If an LZ is not established by the ground unit when the first helicopter arrives, then the first helicopter should establish altitude and orbit location requirements for the other arriving

helicopters. Recommended altitude separation between helicopters is 500 feet (weather and airspace permitting). Helicopters can orbit on cardinal headings from the scene coordinates.

(2) Upon landing in the LZ, the first helicopter should update the other helicopters on the LZ conditions, i.e., space, hazards and terrain.

(3) Before initiating any helicopter movement to leave the LZ, all operators should attempt to contact other helicopters on 123.025 MHz, and state their position and route of flight intentions for departing the LZ.

g. Recommended Multi-Aircraft Hospital Operations. Many hospitals require landing permission and have established procedures (frequencies to monitor, primary and secondary routes for approaches and departures and orbiting areas if the heliport is occupied). Pilots should always receive a briefing from the appropriate facility (if required, making contact through the use of the HAA operators' communication center, flight following, etc.) before proceeding to the hospital.

(1) In the event of multiple helicopters arriving at a hospital heliport, each arriving helicopter should contact other inbound helicopters on 123.025 MHz and establish intentions.

(2) To facilitate approach times, the PIC of a helicopter occupying a hospital heliport should advise any other operators whether the patient will be off-loaded with the rotor blades turning or stopped, and the approximate time to do so.

(3) Before making any helicopter movement to leave the hospital heliport, all operators should attempt to contact other helicopters on 123.025 MHz and state their position and route of flight intentions for departing the heliport.

3-10. PATIENT/PASSENGER HANDLING/SAFETY.

a. Documentation of Procedures. Restraint of all personnel in flight is required by § 135.117. As in all part 135 passenger-carrying operations, passenger briefing cards are required in HAA operations. Operators are encouraged to document procedures for the proper restraint of all flight personnel and passengers and the proper use of seatbelts and shoulder harnesses during HAA operations. In addition, it is the responsibility of the PIC to insure passengers (such as hysterical or combative patients) who may pose a hazard to the aircraft or occupants are properly restrained before takeoff. Procedures detailing the proper restraint of patients/passengers should be detailed and documented, taking into account local law and applicable regulations.

b. Training in Procedures. A person designated and trained by the operator may conduct the passenger briefing required by § 135.117. If passenger briefing duties are delegated to non-flightcrew member, the procedure must be covered in the operator's operations and training manual or other appropriate documentation.

3-11. BIOHAZARD CONTROL. HAA operators are encouraged to educate pilots, medical crewmembers, and maintenance personnel in mitigating exposure to blood borne pathogens and biohazards. They should observe universal precautions and receive appropriate vaccinations

prior to working on or around HAA aircraft. Procedures should be established for each base for HAA and equipment cleaning and the disposal of biohazard materials.

3-12. FLIGHT TIME, DUTY PERIODS, AND REST REQUIREMENTS.

a. Flight Time/Duty Limitations and Rest Requirements. Part 135 subpart F offers multiple ways to comply with this requirement. Each operator needs to maintain records for its personnel and distinctly differentiate their flight time, duty time and rest time.

(1) Section 135.267 is applicable to unscheduled on-demand part 135 flights with one or two pilots.

(2) Most HAA operations are conducted under the provisions of §§ 135.267 and 135.271. The much less commonly used provisions for conducting HAA operations are those in § 135.271. This section was developed specifically for part 135 HAA operations by hospital-based programs. This section is more restrictive than § 135.267. Under the provisions of § 135.271, a flightcrew member may not be assigned any other duties while assigned to HAA flight(s.) A pilot that does not receive the required rest period must be relieved of any flight assignment. A certificate holder operating under § 135.271 should establish a recordkeeping mechanism to show that only bona fide air ambulance flights are conducted during these assignments.

NOTE: Both §§ 135.267 and 135.271 require a comprehensive recordkeeping process.

NOTE: Company training manuals and OpSpecs should specify which of these sections the HAA operator will comply.

b. Pilot/Helicopter Ratio. For 24-hour HAA operations, it is recommended that no fewer than four pilots be assigned per helicopter. An HAA operation with a high operational tempo or those with unusual circumstances may require a higher pilot-to-helicopter ratio. Sufficient staffing levels should be established to promote operational safety standards.

c. Maintenance Personnel Rest. Each HAA operator should establish rest policies for maintenance personnel similar to those for flightcrew. Rest periods should be 10 consecutive hours within the previous 24 hours and at least one 24-hour day for every seven 24-hour days. This requirement should be the same for contractors or vendors performing maintenance.

d. Flightcrew Member Rest Area. An adequate rest area should be provided for flightcrew members assigned HAA duty. This facility is an explicit regulatory requirement for those operators operating in accordance with § 135.271. This area should be at or in close proximity to a hospital or other approved location at which the HAA assignment is performed. A crew rest area should be available on a continuous basis exclusively for flightcrew members away from the general flow of vehicle and pedestrian traffic and should provide a shower, toilet and changing facilities, a bed with sheets, pillow and blankets, and be environmentally controlled for comfort.

3-13. RAPID FUEL AND OXYGEN REPLENISHMENT PROCEDURES. Refer also to the current edition of AC 91-32, Safety in and Around Helicopters.

a. Training and Qualification. The operator must train and qualify all applicable personnel in rapid fuel and oxygen replenishment procedures before conducting such operations. The operator should include the following points in their procedures:

(1) Only turbine engine helicopters fueled with JET A or JET A-l fuels should be refueled while an engine is running.

(2) Oxygen replenishment should not be conducted while refueling operations are underway.

(3) Helicopters being refueled while an engine is running should have all sources of ignition or potential fuel spills located above the fuel inlet port(s) and above the vents or tank openings. Ignition sources may include, but should not be limited to the following:

- Engines,
- Exhausts,
- Auxiliary power units (APU), and
- Combustion-type cabin heater exhausts

(4) Only under the following conditions should operators permit helicopter fuel and oxygen servicing while engines are running:

(a) A company trained and qualified helicopter pilot should be at the aircraft controls during the entire rapid fuel and oxygen servicing process.

(b) Patients should be off-loaded to a safe location before rapid refueling or oxygen replenishment operations. *Where the PIC deems it necessary for patients to remain onboard for safety reasons, all helicopter engine(s) should be shut down and the replenishment conducted with the engine(s) off.*

(c) Passengers should not be loaded or unloaded from the aircraft during rapid replenishment operations.

(d) Only designated personnel, properly trained in rapid replenishment operations, should operate the fuel and oxygen dispensing equipment. Written procedures should include the safe handling of the dispensing equipment.

(e) All doors, windows, and access points allowing entry to the interior of the helicopter that are adjacent to, or in the immediate vicinity of, the fuel inlet ports should be closed and should remain closed during refueling operations.

(f) Before introducing fuel into the helicopter, the helicopter should be bonded to the fuel source to eliminate the potential for static electricity arcing.

(g) Fuel should be dispensed into an open port from approved dead man-type nozzles, with a flow rate not to exceed 10 gallons-per-minute (38 liters-per-minute), or through close-coupled pressure fueling ports. Where fuel is dispensed from fixed piping systems, the hose cabinet should not extend into the rotor space. The operator should provide a curb or other approved barrier to restrict any servicing vehicles from coming closer than within 10 feet (3 meters) of any helicopter rotating components. If an operator cannot provide a curb or approved barrier, servicing vehicles should be kept 20 feet (6 meters) away from any helicopter rotating components and a trained person should direct the approach and departure of the servicing vehicles.

b. Procedure for Evacuation During Aircraft Servicing. A certificate holder's refueling and oxygen replenishment policies and procedures should include any special considerations for the evacuation of passengers (patients). Operators should consider the following requirements when establishing procedures for evacuation of passengers during helicopter servicing:

(1) The certificate holder should establish specific procedures covering emergency evacuation during rapid refueling for each type of aircraft they operate.

(2) If passengers remain onboard an aircraft during fuel or oxygen servicing, there should be enough qualified people trained in emergency evacuation procedures to evacuate the patients.

(3) A clear area for emergency evacuation of the aircraft should be maintained adjacent to not less than one additional exit.

(4) If rapid fuel and oxygen replenishment operations take place with passengers onboard, the certificate holder should notify the Aircraft Rescue and Fire Fighting (ARFF) operation, if available, to assume a stand-by position near the fueling activity with at least one vehicle. This vehicle should be in position before commencing refueling.

(5) Operators should display all no smoking signs in the cabin(s), and the crewmembers should enforce the no smoking rule during rapid refueling and oxygen replenishment.

CHAPTER 4. TRAINING

4-1. GENERAL. This chapter identifies considerations for training for all helicopter air ambulance (HAA) personnel including flightcrew members, medical personnel, Operations Control Specialists (OCS), ground personnel and maintenance personnel. Emphasis is on training beyond the capabilities normally associated with Title 14 of the Code of Federal Regulations (14 CFR) part 135 operations. Most notably, HAA operations include a training program that explicitly requires well-considered and documented risk analysis and human factors issues.

4-2. HAA PILOT-IN-COMMAND (PIC)/SECOND-IN-COMMAND (SIC) GROUND TRAINING. Examples of ground training are provided in Appendix C of this advisory circular (AC). Following are some recommended HAA-specific curriculum items that are suggested by industry best practices:

a. Ground Training Curriculum.

(1) Risk analysis procedures (these are required by regulation and described in paragraph 3-4 and Appendix A of this AC).

(2) Local flying area (LFA) orientations.

(3) Flight planning and weather minimums (described in paragraph 3-3 of this AC).

(4) Flightcrew functions and responsibilities (including Crew Resource Management (CRM) as described in paragraph 4-9 of this AC).

(5) Obstacle recognition and avoidance.

(6) Aircraft systems variations, such as special electrical systems, navigational radios and instrumentation and their performance characteristics.

(7) Handling and securing of special medical equipment such as stretchers, isolettes, balloon pumps and ventilators.

(8) Appropriate restraint of infants, pediatric patients and passengers who may pose a threat to the safety of the aircraft and crew, to include prisoners.

(9) Hospital heliport operations and procedures.

(10) Day and night unimproved landing area (scene) operations.

(11) International operations and programs (if appropriate).

(12) Bloodborne pathogens, biohazard and infection control, including prevention and control of infectious diseases.

(13) Refueling procedures and methods to ensure fuel quality.

(14) Inadvertent instrument meteorological conditions (IIMC), whiteout, brownout and flat light conditions (described in paragraph 3-9 of this AC).

(15) HAA-specific equipment training (i.e., night vision goggles (NVG), Helicopter Terrain Awareness and Warning System (HTAWS), radar altimeter, etc.).

4-3. HAA PIC/SIC FLIGHT TRAINING.

a. Use of Simulators.

(1) Helicopter flight simulation training devices (FSTDs) are rapidly becoming more advanced. Some are now capable of full-motion with realistic visual cockpit displays. A growing number of helicopter FSTDs are approved by the Federal Aviation Administration (FAA).

(2) Training in IIMC, flat light, and other special conditions can be enhanced through the use of simulators. Simulators have the capability to decrease visibility and simulate a variety of situations not possible in flight. Simulators can provide realistic training in sudden onset emergencies such as dual engine failures. It is strongly recommended that, where possible, FSTDs should be included in part 135 training and checking activities.

(3) Inspectors should become thoroughly familiar with the types of simulators and simulator practices employed by their operators.

b. Flight Training Curriculum. At a minimum, the following topics should be included in the HAA flight training curriculum. Examples of flight training and checking practices are provided through the inclusion of training material as Appendix C of this AC.

(1) LFA orientation (day/night). LFA ground (and optional flight) training should familiarize pilots with LFA terrain, airspace, air traffic facilities, weather (including seasonal sun glare, icing, fog and convective weather) and available airports, heliports, Landing Zones (LZ) and their respective approaches.

(2) Operations Control Center (OCC) interface and utilization.

(3) Hospital heliport operations and procedures (day/night and multi-aircraft).

(4) Unimproved LZ (off-airport) operations (day/night and multi-aircraft).

(5) Day and night cross-country flight to include cockpit and exterior lighting and forced landing considerations (including use of a searchlight if installed).

(6) Communications, including air-to-ground and flightcrew/medical crew procedures.

c. IIMC Avoidance and Recovery Procedures. Training and checking should emphasize the recognition of circumstances likely to lead to IIMC encounters and encourage the pilot to abandon continued visual flight rules (VFR) flight into deteriorating conditions. IIMC may occur when visual conditions do not allow for the determination of a usable horizon, such as flat light conditions (discussed in paragraph 3-9 of this AC) and night operations over unlit surfaces in

low lighting conditions. These conditions may occur in high ceiling and visibility environments. The result may be a loss of horizontal or surface reference by which the pilot typically controls a helicopter in VFR flight. Without adequate training and checking, these conditions may lead to loss of control that may not be survivable.

(1) All HAA pilots must be trained in basic instrument flying skills to recover from IIMC, including those authorized to conduct instrument flight rules (IFR) operations under part H operations specifications (OpSpecs). Training must also be provided on unplanned transition from an intended VFR flight to emergency IFR operations, which involves a different set of pilot actions, including navigation and operational procedures, interaction with air traffic control (ATC) and CRM.

(2) IIMC training should include identification of a predetermined minimum altitude/airspeed combination which should not be exceeded. If this minimum altitude/airspeed combination cannot be maintained, a diversion to better conditions or a return to the starting base should be the first course of action. Training should emphasize that deteriorating conditions may also dictate a landing short of the destination (even an off-airport precautionary landing) or initiating an emergency transition to IFR as appropriate to the situation. It should be further emphasized that such a decision on the part of the PIC is within the pilot's emergency authority and the pilot will not be subjected to disciplinary action solely based on the transition to IFR or the precautionary diversion or landing.

(3) An oral or written test covering procedures for aircraft handling in flat light, whiteout and brownout conditions, including methods for recognizing and IIMC conditions, is required. (Refer to part 135, § 135.293(a)(9).)

(4) Training and checking for all pilots, whether helicopter instrument rated or not, must include attitude instrument flying, recovery from unusual attitudes and ATC communications. The objective is for non-instrumented rated pilots to demonstrate their ability to be able to recover to visual meteorological conditions (VMC). Pilots should receive training, regardless of their Instrument flying qualifications or lack thereof, so following an IIMC encounter they can maneuver a helicopter from instrument meteorological conditions (IMC) to VMC solely by reference to instruments. Checking of their ability is covered in the flight test required by § 135.293(c).

(5) In the absence of an IFR-certified helicopter, training and checking should include instrument maneuvers appropriate to the installed equipment, the certificate holder's OpSpecs and the operating environment.

(6) For checking, if the aircraft is appropriately equipped and the check is conducted at a location where an instrument landing system (ILS) is operational, an ILS approach should be demonstrated. If unable to conduct an ILS approach, a Global Positioning System (GPS) approach should be demonstrated if the aircraft is equipped with an IFR-approach-capable GPS receiver that is maintained to IFR standards (including a current IFR database) and the check can be conducted where a GPS approach is available. If neither ILS nor GPS procedures can be performed, another type of instrument approach must be performed. Very high frequency (VHF) omnidirectional range station (VOR), automatic direction finder (ADF) and airport surveillance

radar (ASR) approaches are options, depending upon available facilities and equipment. Partial panel operations should be considered for inclusion in checks if attitude and gyroscopic heading information are available from single sources. In the case of a helicopter without gyroscopic instruments, the operator should consult with their principal operations inspector (POI) for alternative training and checking methods.

(7) In the event the certificate holder does not have OpSpecs for night or instrument conditions, the aircraft is not equipped with an attitude reference system, a turn indicator or coordinator, or an attitude gyro, and the operating environment is predominantly VFR, the pilot being checked may not be required to demonstrate a VMC recovery from IIMC. Under these circumstances, it is recommended that the pilot be examined verbally in the IIMC recognition and avoidance techniques developed by the operator.

d. Night Training. Many HAA-associated accidents occur at night. Pilot night proficiency is essential for twenty-four hour HAA operations. While not required by regulations, night operations should be emphasized in flight, ground and simulator training.

(1) Night training should be tailored to the certificate holder's specific requirements and capabilities considering the experience level of their pilots, the area of operations, type of aircraft and installed equipment.

(2) Best practices suggest night flight training should include the use of Night Vision Imaging System (NVIS); the appropriate use of HTAWS and radar altimeters. Appropriate use of these technologies will also contribute to pilot proficiency at night, in IIMC and special conditions.

NOTE: This AC is not intended to suggest training or operating a helicopter in actual IMC conditions without a qualified, competent and proficient pilot, a properly equipped helicopter and an IFR clearance. The purpose of the training described here is to provide pilots with an additional margin of safety when conducting HAA operations.

NOTE: Effective April 22, 2017, all HAA pilots must hold a valid helicopter instrument rating or an Airline Transport Pilot Certificate (ATPC) with a category and class rating not limited to VFR. (Refer to § 135.603.)

4-4. MEDICAL PERSONNEL/CREWMEMBER BRIEFING/TRAINING.

a. Required Medical Crewmember Briefing/Training. As stated in § 135.621(a), the pilot in command (PIC) or other flightcrew member must ensure that all medical personnel receive and complete a HAA medical personnel specific safety briefing prior to each HAA operation in which they participate, or, as authorized by § 135.621(b), have completed the certificate holder's approved medical personnel safety training program within the previous 24 months. There is no grace period associated with this 24-calendar-month training period. This training must cover:

- Physiological aspects of flight;
- Patient loading and unloading;

- Safety in and around the helicopter;
- In-flight emergency procedures;
- Emergency landing procedures;
- Emergency evacuation procedures;
- Efficient and safe communications with the pilot; and
- Differences between day and night operations, if appropriate.

b. Recommended Additional Medical Personnel Training. In addition to these required briefing/training subjects, training in the following topics has been identified through industry best practices as fostering crewmember proficiency and safety:

- External power unit (EPU) door and cart;
- Medical equipment – loading and unloading/securing;
- Oxygen system and outlets;
- Audio panel and headsets;
- Lights and vents;
- Cabin cleaning;
- Emergency locator transmitter (ELT);
- Emergency fuel shutoff; and
- Radios –VHF, FM, 800 megahertz (MHz).

4-5. OCS TRAINING. OCCs are staffed during all hours of HAA operations by one or more OCSs, trained to provide a wide range of operational support for the certificate holder's HAA operations. At a minimum, OCSs are required to communicate with pilots, provide weather briefings, monitor flight progress and participate in the preflight risk analysis completed by the pilot (refer to § 135.617). This does not end their involvement in risk analysis, which is a continuous process until the flight is completed. OCSs must be trained in their duties and responsibilities, including duty-time limitations as developed by the certificate holder. By mirroring training requirements of § 135.619(b) into existing staff members and creating standard operating procedures (SOP) scalable to the size of the operation, it is possible for a small operator, with minimal expense, to increase the safety of their HAA operations.

a. HAA OCS Training. Section 135.619(d) establishes the requirement and § 135.619(f) establishes the minimum training for HAA certificate holders operating 10 or more HAAs. Certificate holders operating fewer than 10 HAAs are encouraged to use the same training in all HAA operations.

(1) Preferably, although not required, HAA OCSs should be trained as helicopter pilots and, ideally, be highly experienced HAA pilots.

(2) Before performing the duties of an OCS, each person must satisfactorily complete the certificate holder's FAA-approved OCS initial training program. Initial training must include a minimum of 80 hours of training on the topics required in § 135.619(f).

(3) Each OCS must complete a minimum of 40 hours of recurrent training, every 12 calendar-months after satisfactory completion of initial training.

b. OCS Prior Experience. A certificate holder may reduce the regulatory requirement of 80 hours of initial training provided the individual has certain prior experience. The training may be reduced as appropriate but not less than a minimum of 40 hours. It is recommended that the certificate holder perform a training needs assessment to determine what training requirements (per § 135.619(f)) may not be needed for all for persons who have obtained, prior to beginning initial training, a total of at least 2 years of experience during the last 5 years in any one or combination of the following areas:

- Military aircraft operations as a pilot, flight navigator or meteorologist;
- Air carrier operations as a pilot, flight engineer (FE), certified aircraft dispatcher or meteorologist; or
- Aircraft operations as an air traffic controller or flight service specialist.

c. Training Requirements. OCS training requirements are specified in § 135.619(f). Other requirements, as determined by the Administrator to ensure safe operations, may be added, depending upon each individual HAA operator's circumstances. In addition to required initial and annual training, it is recommended that recurrent training include carrying out periodic emergency procedure drills. Recurrent training and checking must be accomplished before the end of the 12th calendar-month since the last check was accomplished.

d. Testing. OCSs must pass an FAA-approved knowledge and practical test given by the certificate holder on topics required in § 135.619(f). If an OCS fails to satisfactorily complete recurrent training and checking, within this time, the individual may not perform OCS duties until the training and checking is accomplished. There is no provision for a grace period. Requalification of OCS following a lapse may be accomplished by satisfactorily completing the recurrent training and checking. In the event of a test failure, the OCS retest must be proceeded by retraining in the subject areas missed and retesting should cover all subject areas.

NOTE: Effective April 22, 2016, all certificate holders authorized to conduct HAA operations with 10 or more HAA-capable helicopters assigned to the certificate holder's OpSpec must have an OCC. (Refer to § 135.619.)

4-6. COMMUNICATIONS SPECIALISTS TRAINING. Information on communications specialists and their training is provided in the current edition of AC 120-96, Integration of Operation Control Centers into Helicopter Emergency Medical Services Operations. Communication specialists may be employed by the HAA operator, a hospital, and ambulance dispatch center or local law enforcement entities (e.g., local public safety or 911 dispatchers).

a. Training. There are no regulatory qualifications requirements for communication specialists. Employers should provide sufficient aviation-specific training to permit them to perform their intended functions and to know what their limits of authority may be. Communication specialists not employed by the certificate holder, that provide services through either contract or agreement, must be trained in accordance with the certificate holder's approved training program. It is recommended this training would include portions of the OCS training curriculum described above.

b. Third Party Training Providers. Certificate holders may employ outside training resources to provide consistent training to communication specialists, providing the contractor and their training syllabus are approved by the certificate holder.

4-7. GROUND PERSONNEL TRAINING/ORIENTATION. The FAA recommends that HAA operators develop a training program for hospitals, first-responders and law enforcement personnel that includes:

a. LZ Area Evaluation. LZ area evaluation to include size, surface, suitability of terrain, hazard/obstacle identification and the effects of rotor-wash.

b. Use of Visual Cues. The use of visual cues for positioning and parking the helicopter (e.g., standard hand signals and communications).

c. Methods of Lighting. Methods of lighting night landing zones, ground/vehicle lighting considerations, and discipline related to NVG operations.

d. Safety. Personal safety in and around the helicopter, including an overview of FAA rules and safety measures for the specific helicopters that are operated by the certificate holder.

e. Loading/Unloading with Helicopter Shut Down. Loading and unloading with the helicopter shut down.

f. Loading/Unloading with Helicopter Running. Loading and unloading the helicopter with rotors and/or engine running, including the use of a tail rotor guard or lookout.

g. Emergency Landing Procedures. Emergency landing procedures, such as emergency shut-off procedures, securing equipment, etc.

h. Other Emergency Procedures. Emergency procedures for handling fuel leaks, helicopter fires, fire suppression and other situations requiring an emergency response.

i. Helicopter Evacuation Procedures.

j. Other Procedures. Other procedures for day/night operations into and out of an unimproved landing site.

> **NOTE: The Aeronautical Information Manual, chapter 10, 10-2-3 provides information that may be helpful in planning outreach training. Additionally, several industry publications are available to provide information on training for LZ operations.**

4-8. MAINTENANCE PERSONNEL TRAINING.

a. Training. Maintenance personnel participating in HAA operations should receive training to meet specific needs unique to these operations. This includes the mounting and maintenance of medical equipment, non-aviation radios and other communications equipment and the scheduling and performance of maintenance to facilitate the demands of either scheduled

or non-scheduled HAA operations. Training of maintenance personnel is required in accordance with § 135.433.

b. Supplemental Training. Maintenance personnel should be trained on servicing and maintaining medical oxygen systems and other equipment as required. Training should include biohazard control and mitigation associated with HAA operations.

NOTE: Recurrent training (and its documentation) is recommended for all maintenance personnel in addition to initial training.

4-9. CRM TRAINING. Flightcrews may experience high stress levels in HAA operations. CRM training is intended to prevent inappropriate actions and decisions during periods of stress. HAA operators should implement CRM training that builds effective integration and coordination during routine flight operations as well as including issues such as the use of medical personnel to supplement flightcrew, as appropriate during emergency operations including IIMC recovery, and non-emergency operations including NVG operations and flight into unimproved LZs, etc. Due consideration should be given to the over-riding medical care priorities that medical personnel serve when training medical personnel in aviation related activities. Refer to the current edition of AC 120-51, Crew Resource Management Training.

4-10. AIR MEDICAL RESOURCE MANAGEMENT (AMRM) TRAINING.

a. General. The purpose of an AMRM training program is to create a shared safety culture, between customer management and HAA operator management cooperatively bringing together HAA operators and medical organizations. Clearly defined and consistently implemented operating philosophies, policies, safety culture, best practices and procedures should be reflected in training to create an understanding of authority and responsibility of all levels of the involved personnel. Refer to the current edition of AC 00-64, Air Medical Resource Management, to identify training issues.

b. Shared Training. Aviation and medical management personnel should collaboratively and explicitly define the safety responsibility and authority of managers and subordinates. Shared AMRM training provides a common language and understanding to enable appropriate safety communication, responsibility and authority, within both HAA operators and medical organizations (and others as appropriate). Ideally, AMRM training should not be limited to the classroom but include engagement with high-level decisionmakers, including medical or hospital management.

4-11. JUDGMENT AND DECISIONMAKING TRAINING. Crewmember judgment is the mental process by which the crewmember recognizes, analyzes, and evaluates information about himself or herself, the helicopter and the external environment. Industry best practices recognize that judgment and decisionmaking can be developed and improved with training. Pamphlet DOT/FAA/PM 86 45, Aeronautical Decision Making for Helicopter Pilots, is a recommended tool to improve aeronautical decision-making (ADM).

a. Topics. Decisionmaking training should include topics such as LFA, refueling locations, terrain, local weather patterns, aircraft characteristics and capabilities and medical equipment. Emphasis in training should be placed on identifying and addressing the types of

decisions likely to be required by the specific needs of HAA operations. This includes, for example, training in the decisionmaking process involved when changing weather conditions might dictate a route change or termination of flight.

b. Risk Analysis. Risk analysis is an integral component of the decisionmaking process. It must be trained for, understood and practiced by HAA crewmembers before and during all flight operations.

c. Decisionmaking Training. Emphasizes that the best practices in the industry reflect that the medical condition of the patient should not be a factor in the PIC decision to accept or decline a flight and should not be briefed to the PIC in advance of the decisionmaking process.

d. Management Personnel. Management personnel should participate in the certificate holder's training program. Management personnel should be familiar with the ADM process. Knowledge of appropriate FAA regulations and guidelines related to safe operations is essential. (See Chapter 8.)

e. Human Factors. The operator must effectively address human factors that have the potential to affect HAA operations. (Refer to § 135.330.)

CHAPTER 5. EQUIPMENT

5-1. THE HELICOPTER AIR AMBULANCE (HAA) HELICOPTER. The selection of a suitable HAA helicopter (and its subsequent modification) will include considerations exclusive to the HAA operating environment. An applicant should identify, in their initial application, any specialized flight operations equipment that will be aboard the helicopter(s) used for HAA operations.

a. Weight and Performance of HAAs. An operator should consider the effect of the significant added operating weight associated with even a basic HAA helicopter's mission-specific modifications including equipment such as a Helicopter Terrain Awareness and Warning System (HTAWS), radio altimeter, and Flight Data Monitoring System (FDMS). In addition, weight penalties are associated with an aeromedical interior, medical equipment and supplies, and provision for medical personnel and their personal gear. Equipment such as Night Vision Imaging System (NVIS), satellite communication (SATCOM), position tracking and reporting systems and possibly equipment supporting instrument flight rules (IFR) capability provides additional operational capability but further reduces helicopter payload and performance.

b. Control and Use of HAAs. By regulation (Title 14 of the Code of Federal Regulations (14 CFR) part 135, § 135.25), the certificate holder is required to have control and exclusive use (including maintenance) of at least one aircraft to be used in part 135 service. Helicopters used in HAA operations may be owned or leased by the certificate holder. In the case of leased equipment, the lessor may be the certificate holder's customer (hospital group or community). This common industry practice may introduce operations control complications unless the lease is executed in a manner that transfers operations control unequivocally to the certificate holder. Operators should be on guard against the potential of perceived operations control retention by the lessor. This practice has historically led to undue pressure on the operator during flight risk analysis and flight authorization decisionmaking processes.

5-2. EQUIPMENT REQUIRED BY REGULATION FOR HAA OPERATIONS.

a. Radio Altimeter. A Federal Aviation Administration (FAA)-approved radio altimeter or an FAA-approved device that incorporates a radio altimeter, is required and must be operational unless otherwise authorized in the certificate holder's approved minimum equipment list (MEL). Specifications for radio altimeters under this requirement are in § 135.160. Operators should establish and document procedures to be followed if operations are conducted with an inoperative radio altimeter in accordance with an MEL. Incorporating procedures such as requiring increased ceiling and or visibility and limiting flights where white out, brownout, or encounters with flight light conditions may be possible may mitigate risk. Inoperative equipment should also be addressed as a risk analysis factor as discussed in appendix A of this advisory circular (AC).

NOTE: The FAA may authorize deviations for certain helicopters (maximum gross takeoff weight no greater than 2,950 pounds) unable to incorporate a radio altimeter. (Refer to § 135.160.)

b. HTAWS. An HTAWS that meets the specifications of FAA Technical Standard Order (TSO) C-194 and RTCA DO-309 must be installed and operational in all HAA helicopters. The operator's manuals or other documentation must specify appropriate procedures for the use of this equipment, including the proper flightcrew response to audio and visual warnings. There is a process for operators with HTAWS covered by a deviation under § 21.618 to meet the regulatory requirements of § 135.605. The HTAWS requirement becomes effective on April 24, 2017.

c. FDMS Capable of Recording Flight Performance Data. To meet the requirements of § 135.607, the operator must install an FAA-approved FDMS in each HAA. In this context, "approved FDMS" means only that the installed FDMS be capable of recording "flight performance data" including at minimum: Latitude, Longitude, Barometric Altitude, and Date/time of recording, once per second and have sufficient memory to retain these data over 4 hours of flight time. The FDMS is approved by Supplemental Type Certificate (STC), design review, or field approval, depending upon the complexity of the installation, the interface between the FDMS and other systems installed aboard the aircraft, and that it poses no hazard to other onboard equipment, nor any hazard to occupants. Beyond the minimum parameters, additional parameters recorded by the FDMS are at the discretion of the operator. Retention and use of recorded data is also at the discretion of the Operator. The FDMS requirement becomes effective on April 23, 2018. The FDMS is not to be confused with a flight data recorder (FDR) certified under § 27.1459, though an FDR would be acceptable to meet the FDMS requirement.

(1) The FDMS must operate from the application of electrical power prior to engine start until the removal of electrical power after termination of the flight (refer to § 135.607). The FDMS design should be compliant with Design Assurance Level D (DAL-D) as set out in the latest revisions of both RTCA DO-178 (for software development) and RTCA DO-254 (acceptable airborne electronic hardware development standards). FDMS inspection and maintenance should be conducted in accordance with the manufacturer's instructions for continued airworthiness (ICA). Additional information is in AC 27-1B MG 6, Miscellaneous Guidance (MG) for Emergency Medical Service (EMS) Systems Installations.

(2) The operator determines and maintains the FDMS data stream format and parameter documentation. The operator is responsible for determining:

- Parameters(beyond the minimum direct parameters of latitude, longitude, barometric altitude, and date/time of recording) that are recorded and which are derived from recorded data;
- Latency (how frequently each recorded parameter is recorded);
- Bit resolution of each parameter;
- Operational range of each parameter; and
- Conversion algorithms from digital or analog signal units to engineering units.

(3) Information may be directly recorded or may be deduced from recorded data (e.g., continually updated three dimensional Global Positioning System (GPS) location data may yield ground speed, heading and course being flown and altitude). The FDMS should record digital or analog raw data, images, cockpit voice or ambient audio recordings or any combinations thereof which ideally yield at least the following flight information:

- Location;
- Altitude;
- Heading;
- Speeds (airspeed and groundspeed);
- Pitch, yaw, and roll attitudes and rate of change;
- Engine parameters;
- Main rotor RPM;
- Ambient acoustic data;
- Radio ambient audio; and
- Any other parameter the operator deems necessary (e.g., high definition video recording looking forward including instrument panel and forward cockpit windshield view, intercommunications system (intercom) between pilot and medical crew, communications with air traffic control (ATC), OCS, base operations, first responders at scene, hospital, etc.)

(4) The FDMS should have sufficient non-volatile memory to record flight performance data over the course of an entire flight operation. FDMS data should be retrieved periodically and the resulting information be used for Safety Assurance (SA) programs such as flight operations quality assurance (FOQA) at the discretion of the operator. The recording memory capacity of the FDMS would correlate directly to the maximum data retrieval period.

(5) Though the FDMS is not required to be hardened or crash worthy such as an FDR, it should be able to endure extreme environmental conditions including storage and operational use temperatures, the forces applied during an accident, post-impact water immersion, and to a limited extent, to high heat or fire. Refer to AC 27-1 and RTCA DO-160 (current revisions) for test and analysis options.

d. Additional Equipment Required for HAA Overwater Operations. Except for takeoff and landing, or unless operations specifications (OpSpecs) allow otherwise, overwater operations beyond autorotational distance from the shoreline requires the following special equipment to be aboard the HAA. Refer to the appropriate Title 14 of the Code of Federal Regulations (14 CFR) section. Requirements can be found in §§ 135.168, 135.183 and 136.1.

(1) Approved life preservers, equipped with an approved survivor locator light, must be carried aboard all part 135 helicopters, including HAA, for each occupant. Each occupant must wear a life preserver when the flight operates beyond an autorotational distance from the shoreline. The exception to this requirement is when wearing a life preserver would be inadvisable for medical reasons as determined by medical personnel.

(2) A 406 megahertz (MHz) emergency locator transmitter (ELT), with a 121.5 MHz homing capability and approved batteries must be installed in the HAA. This ELT must meet the TSO and RTCA standards listed in § 135.168(f).

5-3. MEDICAL EQUIPMENT FOR HAA OPERATIONS. Part 135 certificate holders conducting HAA operations will utilize equipment associated with medical transport.

a. HAA Interiors. HAA interiors are typically lined with washable panels, edge sealed to prevent leakage of fluids into interior spaces beneath the subfloor. Interlocking and sealed flame-retardant and moisture-resistant interior panels be designed in accordance with 14 CFR parts 27 or 29 would meet the requirements of an STC.

b. Stretchers (Litters). Stretchers should be designed and FAA-approved for HAA use. Refer to part 27, § 27.561 and part 29, § 29.785 for further information. Restraining devices, including shoulder harnesses, should be available to ensure patient safety.

c. Medical Oxygen Systems. Medical oxygen and nitrous oxide for patient use may be delivered via compressed gas systems consisting of high pressure compressed gas cylinders, regulators, valves, and plumbing; cryogenic liquid oxygen systems consisting of an insulated reservoir tank instead of high pressure compressed gas cylinders and the rest of the downstream equipment mentioned above; and molecular sieve oxygen concentrators. In all cases, the installation must utilize only FAA-approved components installed in accordance with the manufacturer's STC and field approvals as appropriate to the system chosen. Servicing of permanently installed medical oxygen systems should be delegated to appropriately trained flightcrew members or maintenance personnel. Removal, replacement, and securing of portable oxygen systems may be accomplished by appropriately trained medical personnel.

d. Medical Portable Electronic Devices (MPED). MPEDs, such as Automated External Defibrillators (AED), airborne patient medical telemonitoring (APMT) equipment and portable oxygen concentrators (POC), authorized by Special Federal Aviation Regulation (SFAR) 106, should be designed and tested to meet requirements in accordance with the current edition of RTCA/DO 160, section 21, Category M (as referred to in paragraph 1-7 of this AC.) For further information, refer to the current edition of AC 91-21.1, Use of Portable Electronic Devices Aboard Aircraft.

e. Supplemental Lighting System. Standard aircraft lighting may not be sufficient for adequate patient care. Some HAAs may require additional lighting. The cockpit must be shielded from light emitted from the patient area during night operations. Any supplemental lighting must be compatible with an NVIS installation. HAA industry best practices suggest, where possible, installing an emergency lighting system with a self-contained battery pack to allow for continued patient care and emergency egress from the helicopter in the event of a primary electrical failure.

f. Electric Motor-Driven Medical Devices. Medical equipment attached and secured to a mounting inside the HAA should have electric motors thermally protected and isolated against inadvertent overheating to reduce fire hazards. Electrical motors should also be fitted with shielding and filters as necessary to prevent conducted and radiated electromagnetic interference (EMI).

g. Electrical Power Generating Capacity. For each HAA equipped with multiple electrically powered auxiliary systems, an analysis of generating capacity against power consumption should be performed and documented. The operator must be able to meet § 135.159 regulatory requirements.

5-4. RECOMMENDED EQUIPMENT FOR HAA OPERATIONS. Other equipment may also be installed on HAA aircraft such as: a helicopter-approved searchlight, specialized communication equipment for coordination with ground responders, NVIS with STC or manufacturer approved NVIS compatible interior lighting, SATCOM, and aircraft position tracking equipment.

a. Helicopter-Approved Searchlight. Industry best practices are that a HAA should be equipped with a high-powered mounted searchlight manipulated by the pilot, having a minimum traverse of 90 degrees vertical and 180 degrees horizontal and capable of illuminating a landing site. The pilot should be able to fly hands-on with the helicopter flight controls while operating the searchlight.

b. Communications with Hospitals and First Responders. In addition to the radios required for ATC and communication with the Operations Control Center (OCC), a radio capable of air-to-ground communications is recommended to ensure coordination with ground personnel (e.g., hospitals, personnel on the scene, police or fire department).

c. Intercommunications System (intercom). An intercom should be provided for pilots and medical personnel to communicate with each other aboard the helicopter. The intercom should provide for isolation of pilot from crew and crew from pilot, with an over-ride in case of an emergency that either party wishes to advise the other about.

d. Wire Strike Protection System. A wire strike protection system is a recommended safety enhancement modification if it has been type certificated (TC/STC) for installation on the specific make, model, and series (M/M/S) of helicopter.

e. Pyrotechnic Signaling Device(s). Recommended to be aboard in a conspicuously marked location easily accessible to HAA occupants.

5-5. EQUIPMENT INSTALLATION EVALUATION FOR HAA OPERATIONS. Any equipment installed onboard a helicopter should comply with the data in AC-27-1B MG 6 and be installed in accordance with the current edition of AC 43.13-2, Acceptable Methods, Techniques, and Practices—Aircraft Alterations; 14 CFR part 43 and part 135 subpart J.

a. Equipment Installation General Considerations.

(1) Equipment installed in racks should meet the G loading requirements imposed by normal flight and an emergency landing, using approved data provided by the equipment manufacturer. Industry best practices suggest that rack mounting is considered preferable to other mounting approaches, such as attachment to FAA-approved poles or other mounting devices. Medical equipment mounting structures in racks should be installed so that equipment that has been attached to them it may be readily removed to accompany a patient.

(2) Mounting structures attached to the aircraft, regardless of type, should be installed and removed by FAA-authorized personnel. A HAA operator should document instructions for removal and replacement of such equipment. The installation of additional equipment following issuance of a STC or field approval is normally done using instructions and operational supplements. Weight and Balance (W&B) data and ICA should be included. Consider also

including such installed equipment in the aircraft MEL. Medical instruments and equipment attached to mounting structures are considered carry-on baggage for W&B purposes. The operator should ensure medical personnel are adequately trained to securely attach equipment to installed mounting structures to prevent hazards in flight.

(3) The requirements of § 135.91(a)(1)(iv), concerning oxygen for medical use by passengers, requires that all installed equipment, including portable devices, be appropriately secured. The structure(s) supporting this equipment should be designed to restrain loads in accordance to FAA certification requirements. (Refer to AC 27-1B MG 6.)

(4) Any cockpit equipment with self-contained illumination that is added to a previously-approved NVIS-compatible cockpit under an STC must be evaluated. Such new cockpit equipment must be approved with respect to NVIS compatibility and appropriate STC or field approval secured. Consult the principal avionics inspector (PAI) and principal maintenance inspector (PMI) for further details.

b. Installation Evaluation.

(1) Each installation should be evaluated at its time of approval to determine if a mechanic is required to perform installation or if other personnel can be trained for its removal or replacement.

(2) The certificate holder must ensure that installation of any additional equipment is compatible with all previously installed and certificated aircraft systems.

(3) Before returning a helicopter to service after the installation of additional equipment, flight tests may have to be accomplished to determine any interference with avionics, navigation, communications or flight and engine control systems. Such flight tests should be accomplished in visual meteorological conditions (VMC). Tests should include all installed equipment and carry-on medical equipment intended to be used for patient monitoring and care during transport. If any incompatibility cannot be solved by appropriate adjustments to newly installed additional equipment or de-conflicted with pre-existing systems, new equipment may not be operated until compatibility issues are resolved. Results of flight tests verifying non-interference and acceptability should be entered into appropriate permanent records for each helicopter.

NOTE: Medical monitors may be affected by the aircraft's electronic equipment. Therefore, at the time of installation and following maintenance, medical personnel should ensure the calibration and operation of such equipment is in accordance with the manufacturer's instructions, operational tolerances and approved data.

NOTE: Patient life support systems, which include litters/stretchers, incubators or isolettes, balloon pumps, etc., not normally included in the type design of the helicopter should be installed in accordance with the applicable part 43 regulations, AC 27-1B MG6, and FAA-approved data.

c. Medical Portable Electronic Devices (MPED). MPEDs that do not exceed electromagnetic emission levels contained in RTCA/DO 160 section 21, Category M, in all modes of operation (i.e., standby, monitor and/or transient operating conditions, as appropriate), may be used on board aircraft without any further testing by the operator. Equipment tested and found to exceed section 21, Category M emission levels are required to be evaluated for EMI and radio frequency interference (RFI) while mounted in the operator's aircraft. All navigation, communication, engine and flight control systems will be operating in the selected aircraft during the evaluation.

d. Medical Oxygen System. Depending upon the type of medical oxygen system installed (including bottles, lines, connectors, gauges, regulators and other system components), the certificate holder will establish an FAA-accepted method, or adopt a manufacturer's approved method, for its servicing and replenishing. If the method of servicing a medical oxygen system requires the disconnection and reconnection of installed fittings, (other than the removal and replacement of a service port cap) a certificated mechanic must perform the servicing. If the method of oxygen system servicing does not require any of the above operations, the service and replenishment procedure must be documented in an appropriate form and be available to the pilot. Each pilot must be trained and checked in the performance of these medical oxygen servicing and replenishment procedures.

e. Electrical Power. All wiring, electrical components and installation procedures should conform to the requirements of parts 27 or 29, as applicable. An electrical load analysis (ELA) should be performed to preclude overload of the helicopter generating system. The system should provide the pilot with a means of rapidly shedding electrical load in an emergency.

f. Motor-Driven Vacuum/Air Pump. Motors and/or pumps should be installed in accordance with appropriate STCs or other FAA-approved information. Any motor-driven device should be installed so as to preclude contact with any flammable fluid, gas or foreign materials that may cause or be susceptible to heat buildup which could lead to fire. Helicopters should be flight-tested with electric motors running to check for interference.

CHAPTER 6. OPERATIONS CONTROL CENTER (OCC)

6-1. GENERAL. This chapter summarizes regulatory requirements, recommendations and best practices regarding the Operations Control Center (OCC). An OCC is required for operators conducting helicopter air ambulance (HAA) operations with 10 or more HAAs and is recommended for other operators. The OCC requirement becomes effective on April 22, 2016. The current edition of Advisory Circular (AC) 120-96, Integration of Operation Control Centers into Helicopter Emergency Medical Services Operations, provides detailed guidance, including recommendations on establishing the physical layout of an OCC. This chapter provides recommendations to assist HAA operators with identifying best practices for implementing OCCs and operations control procedures. It is intended to help encourage and enable operators without a regulatory requirement to establish and operate an OCC to attain their operational benefit.

6-2. CORE CONCEPTS: OCC AND ENHANCED OPERATIONS CONTROL PROCEDURES. There are three primary concepts from AC 120-96 that define an effective OCC and enhanced operations control procedures:

a. Joint Flight Safety Responsibility. The first concept is joint flight safety responsibility for each HAA flight. Joint flight safety responsibility requires that at least one qualified ground staff member, in addition to the PIC, be actively involved in reviewing the PIC risk analysis in accordance with the required risk analysis program (Title 14 of the Code of Federal Regulations (14 CFR) part 135, § 135.617) and be responsible for monitoring factors affecting flight safety before and during the flight. The utilization of qualified Operations Control Specialists (OCS) on the ground also provides additional support and risk monitoring redundancy for pilots in high workload situations.

b. Written Standard Operating Procedures (SOP). The second concept is a requirement for documented SOPs that are used to guide training and standardize operations performance. Standardization of written Operations Control procedures reflects the same concerns that mandate the use of checklists on the flight deck. SOPs are documented so they can be referenced and performed the same way each time. The detail and scope of this documentation should reflect the size and complexity of each HAA operations. SOPs may be accessed either electronically or via hard copy (refer to Operations Specification (OpSpec) A061, Use of Electronic Flight Bag, for in-flight use of electronic documentation), Regardless, written procedures should be readily available, especially in times of high work load situations such as abnormal or emergency operations.

(1) Though industry is moving towards a less paper-dependent environment, a truly paperless environment has yet to be achieved. A key technology (e.g., a local area network (LAN) or workstation) may fail in conjunction with an emergency, or could even be the cause of emergency or abnormal operations. Technology failures may render electronic access to written SOPs unavailable. Therefore, while standard access to written SOPs may be accomplished electronically, these SOPs may not be available, especially in an emergency situation. Hard copy current written versions of all critical SOPs should be maintained and be readily available for use during abnormal or emergency operations.

(2) The requirement for hard copy Operational Control SOPs therefore mandates that the operator also include the Operations Control SOPs in the version and distribution control SOP for managing other required hard copy documents.

(3) Operators should also develop an SOP to provide for a continual internal process to solicit, obtain, and respond to feedback on SOPs and update these SOPs and ensure the value of training based on them. An SOP is needed to provide for a vehicle to continually receive feedback on procedures, respond to and prioritize feedback and accordingly, update procedures, inform staff of changes to procedures, and train staff on new procedures.

c. Leveraging Technology and Communication. The third core concept of OCCs and enhanced operations control procedures is to leverage technology and communication to enhance safety and efficiency. This includes providing an enhanced level of situational awareness to the pilot in command (PIC), OCS, and other individuals.

(1) Flight Operations Support. An OCC is an optimal environment for leveraging technology to support flight operations. An OCC's centralized location can provide economies of scale that make it economically viable to invest in both the information technology (IT) infrastructure and the IT support staff required to support its functions.

(2) Benefits to HAA Operations. An OCC can leverage technology to provide communication and safety benefits to HAA operations. For example, an OCC may be able to acquire weather information for currently non-covered locations. This information may come from a variety of weather feeds available at the OCC, including non-aviation sources such as telephone calls.

(3) Situational Awareness Improvement. As a result of this leveraging of technology, an OCC can contribute to improving the situational awareness of HAA personnel. This includes receiving and filtering information (including weather as in the example above) and providing inputs for or conducting shift-change and preflight briefings.

(4) Provision of Situational Awareness Information. In addition to the regulatory requirements the operator should establish and document procedures to acquire, fuse and provide situational awareness information to the PIC, using the OCC, OCS and other individuals and capabilities as appropriate. This is an example of the use of leveraging technology and communications to reduce risk in HAA operations.

(5) Shift Change Briefing. Operators should have a procedure to ensure the explicit provision by the OCS being relieved, of information on current operational and flight conditions, locations and status of all flights transferred to the relieving OCS, with emphasis placed on hazard updates to the pilots. This may include using conference call or other technology to link personnel at remote sites. This is an example of the use of leveraging technology and communications to reduce risk in HAA operations.

6-3. OCS.

a. OCS Requirements. The OCS is a critical component of the overall concept of emphasizing safe HAA operations. An OCS must be trained for a range of capabilities, as set out in paragraph 4-5 of this AC. The OCS must:

(1) Provide two-way communications with pilots.

(2) Provide pilots with weather briefings, to include current and forecast weather along a planned route of flight.

(3) Monitor progress of each HAA flight.

(4) Ensure pilots have completed all of the required items (as described in § 135.617) on a preflight risk analysis worksheet.

(5) Acknowledge, in writing, specifying date and time, that a preflight risk analysis worksheet has been accurately completed and that, according to their professional judgment, a flight can be conducted safely (as described in § 135.619(a)(iv)).

b. OCS Recommended Capabilities. It is recommended that an OCS:

(1) Participate in adjustments to risk analysis as a continuous process throughout a flight while carrying out regulatory-required flight monitoring responsibilities;

(2) Assist the pilot in mitigating any identified high risk prior to takeoff; and

(3) Secure management approval of a flight authorization if a predetermined level of individual or total risk is exceeded.

6-4. OCC FACILITIES AND CAPABILITIES. AC 120-96 describes possible OCC facilities and capabilities that can be realized by many different structures and physical configurations, depending on operator requirements. There are many possible alternatives, depending on the size and scope of the HAA operator. The OCC provides a physical location where the OCS and any other personnel can access technologies with the overall objective of being able to assist the PIC.

a. Recommended OCC Facilities. The following hardware and software resources should be considered as best practices for developing an OCC. Refer to AC 120-96 for further explanation and details concerning the following issues:

(1) Enabling technologies (to include LANs, Internet access, and digital signature capabilities for form completion).

(2) Aircraft situational displays depicting status of all certificate holder HAA aircraft.

(3) Aviation weather analysis tools (to include textual, graphical and Geographic Information System (GIS)-enabled).

(4) Notice to Airmen (NOTAM) tools (both textual and graphical).

(5) Air traffic flow tools (to include temporary flight restrictions, special use airspace, special areas of operation, military operations airspace, high density and congested airspace, warning areas and weather watch boxes).

(6) Communication tools (to include telephones, email, datalink, radio (aircraft and first responders including Voice over Internet Protocol (VoIP) capabilities), satellite communications (SATCOM) and advanced communication consoles).

(7) Non-aviation situational awareness tools such as the Federal Highway Administration (FHWA) Meteorological Assimilation Data Ingest System (MADIS), Internet capable of accessing weather cams, or television capable of receiving cable news channels.

b. Adapting OCC Facilities and Capabilities to Smaller Operators. Smaller (less than 10 HAAs) operators are not required by regulation to have an OCC staffed by OCSs. However, best practices of such operators have provided examples of the use of similar appropriately scaled methods to achieve the same goal.

c. Voluntary Implementation. If an OCC is not required and the operator chooses to voluntarily implement a similar capability or function, the operator's policies and procedures (and details of training specialists in operations control subject matter) should be established and documented by the operators in their General Operations Manuals (GOM) or other permissible forms of documentation. This documentation system must be accepted by the principal operations inspector (POI). The operator should demonstrate that operational control and PIC responsibility and authority is maintained and safety is not compromised through the duties and responsibilities of the individuals staffing that non-regulatory function.

d. Training Requirements. Operations control training of existing staff members should reflect the training requirements of § 135.619(b). Creating SOPs appropriately reflecting the size and complexity of the operation makes it possible for a small operator to increase the safety of their HAA operations with minimal expense.

CHAPTER 7. MANUALS, DOCUMENTATION, AND RECORDS

7-1. GENERAL. Title 14 of the Code of Federal Regulations (14 CFR) part 135 certificate holders conducting helicopter air ambulance (HAA) operations are subject to generally the same documentation and recordkeeping requirements as are other part 135 certificate holders, with a few additions.

7-2. MANUALS AND DOCUMENTATION. Part 135 certificate holders conducting HAA operations are required to compile and maintain Federal Aviation Administration (FAA)-approved procedures for preflight risk analysis (part 135, § 135.617) and visual flight rules (VFR) flight planning (§ 135.615). The following are subject matter areas which, due to either regulatory requirements or industry best practices, should be included in approved/acceptable documentation in a manual (or other accepted format) that goes beyond those required of other part 135 operations. The list below does not relieve the certificate holder from including other items in their operations manual as required.

a. General Operations Manual (GOM). It is recommended that each single-pilot and basic part 135 certificate holder conducting HAA operations, develop a GOM that covers the subject matter contained in §§ 135.23, 135.615, and 135.617. This manual should be available in each helicopter and at each location where flights are initiated.

b. Accident Incident Plan/Post-Accident Incident Plan (AIP/PAIP). All HAA operators, regardless of size, must establish accident and incident notification procedures, to include the local FAA office, National Transportation Safety Board (NTSB) and FAA certificate-holding district office (CHDO) telephone numbers. This is a requirement shared with other part 135 operations. Due to the nature of the distributed base operation generally conducted by HAA operators, this requirement may be somewhat more complex than a response plan for a single base non-HAA part 135 operation. (Refer to § 135.23(d).)

c. Rapid Refueling Procedures. Refueling with the engine(s) running, rotors turning, and/or passengers on board can be hazardous and must be accomplished in accordance with appropriate documented procedures and by trained personnel.

d. Fuel Quality. Due to the nature of HAA operations, many bases are at locations other than airports. It is recommended that operator-developed documentation define a program for determining and maintaining fuel quality. The operator may choose to procure fuel from commercial fixed base operator sources and/or maintain fuel quality within their own system throughout the chain of custody from receipt (from the distributor) to delivery (into the helicopter). It is recommended that the operator consult International Civil Aviation Organization (ICAO) Doc 9977 AN/489 Manual on Civil Aviation Jet Fuel Supply and the current edition of Advisory Circular (AC) 150/5230-4, Aircraft Fuel Storage, Handling, and Dispensing on Airports.

e. Procedures for Medical Equipment Installation and Removal. Removal and replacement of medical equipment items may have to be performed on a frequent basis. If the operation is simple, does not require tools, and can be done in accordance with approved data and procedures contained in the operator's manual, any person trained by the certificate holder

may be authorized to remove or replace such equipment. If the operator chooses this option, they must include this training in their FAA-approved training and checking program. The HAA operator must document who is authorized to remove and replace equipment on its helicopters. If personnel other than certified mechanics will be removing or replacing equipment, they must do so in accordance with documented instructions and training provided.

f. Flight Authorization and Flight Locating Procedures and Operations Control Personnel Duties and Responsibilities. These should be well considered and be documented in the operations manual. For those operators with an Operations Control Center (OCC), a description of the duties and responsibilities of Operations Control Specialists (OCS) should appear in documentation (refer to § 135.619(c)). Operators not establishing an OCC should document procedures for comparable functions.

g. Local Flying Area (LFA) Documentation. Procedures for developing LFAs should be documented in accordance with § 135.611(a)(2). If any LFAs are proposed and accepted, a list of LFAs and a description of the examination that is given to pilots by the certificate holder enabling the use of alternative minima in these LFAs must be provided to the principal operations inspector (POI) for acceptance. (Refer to § 135.609 and Operations Specification (OpSpec) A021, Helicopter Air Ambulance Operations.)

h. Instrument Flight Rules (IFR) Operating Procedures. The FAA intends to facilitate use of the IFR system by HAA operations through developing approaches and departures to and from heliports that are not served by weather reporting and in accordance with Instrument Approach Procedures (IAP) and departure procedures Standard Instrument Departures (SID) and Obstacle Departure Procedures (ODP) that are developed specifically to serve these heliports. Certificate holders should document procedures for IFR operations at locations without weather reporting (refer to § 135.611). The operator should document procedures for IFR operations using publicly available published IAPs or per privately developed, FAA approved special instrument procedures, point in space (PinS) approach procedures and SIDs/ODPs.

i. VFR Flight Planning Procedures. VFR flight planning procedures must, by regulation, be documented in accordance with § 135.615(d.) As part of the VFR planning process, operators must document their procedures for determining and documenting the highest obstacles and minimum obstacle clearance altitudes along intended routes of flight (including any contingency routes) prior to departure.

j. FAA-Approved Preflight Risk Analysis Procedures. Risk analysis procedures must be documented in accordance with § 135.617. These procedures are discussed in paragraph 3-4 and Appendix A of this AC.

7-3. RECORDS. Part 135 certificate holders conducting HAA operations are subject to recordkeeping requirements above those required of other part 135 operators not engaged in such operations. Records required by § 135.63 should be kept at an operator’s principal business office or other location(s) approved by the Administrator.

a. Pilot Training Records.

(1) LFA(s) Familiarity Verifications. A record of the 12-month local area demonstration or examination given to each pilot for each LFA assigned. (Refer to § 135.609.)

b. Non-Pilot Training Records. Also, see Chapter 4, Training Program.

(1) Preflight Risk Analysis Worksheets. Preflight risk analysis worksheets completed by pilots and OCS in compliance with § 135.617 are subsequently maintained in compliance with §§ 135.617 and 135.619.

(2) OCS. Training records are kept at least for the duration of that individual's employment and for 90 days thereafter. Training records are required by § 135.619(e) to include a chronological log for each course, including the number of hours and the examination dates and results as well as copies of such examinations. Development of a record of OCS duty times would facilitate tracking.

(3) Maintenance Personnel. A recordkeeping system should be used allowing supplemental training to be verified and tracked.

(4) Medical Personnel. Each HAA operator must maintain a record of training for each medical crewmember that contains the individual's name, the most recent training completion date and a description, copy or reference to training materials used to meet the training requirement. This must be maintained for 24 calendar-months following the individual's completion of training.

c. Administrative Records.

(1) OCS Personnel. OCS personnel are among those employees for whom drug and alcohol testing program records must be maintained in accordance with 14 CFR part 120, §§ 120.105 and 120.215.

(2) Timekeeping. Each operator must maintain flight time and duty records for flightcrews. It is recommended that it do the same for OCS personnel to demonstrate compliance with duty time requirements.

CHAPTER 8. SAFETY

8-1. GENERAL. This chapter is intended to make current and potential operators aware of considerations underlying the safety culture that is central to best practices throughout helicopter air ambulance (HAA) operations. An effective safety program should be developed considering all aspects of the operator's policies and procedures essential to the safe completion of a HAA flight. Best safety culture practices, even where they are not an explicit part of the regulations, facilitate compliance and enhance safety. Examples of ways to foster the safety culture are presented in greater detail in Appendix B of this advisory circular (AC).

8-2. SAFETY CONSIDERATIONS FOR HAA OPERATIONS.

a. Safety Commitment. Commitment to safety should start at the top of an organization. The single most important element of a successful safety program is the commitment of senior management. Safety cannot be dictated; it should be practiced. Managers should lead by example and display a safety-conscious attitude including being involved in safety activities. Operators should conduct regular base safety meetings for all affected base and flight personnel.

b. Safety Management System (SMS). Establishment of an effective SMS helps implement a safety culture to address safety considerations unique to HAA operations. Examples of the use of a SMS are provided in Appendix B of this document.

c. Safety Personnel. The HAA operator should designate a safety officer. This individual should be familiar with each aspect of an HAA operation with particular emphasis on safety requirements unique to helicopters. This individual should plan, organize and disseminate information about the safety program to all involved persons. The safety officer should make an effort to reach out to relevant helicopter information sources and organizations such as the International Helicopter Safety Team (IHST), U.S. Helicopter Safety Team (USHST), and Helicopter Association International (HAI) and carefully review the wide range of fact sheets and toolkits available for applicability to their own operations.

8-3. ROLE OF COMPANY PHILOSOPHY AND EXECUTIVE/SENIOR MANAGEMENT.

a. Management Commitment. The regulatory requirement for some HAA operators to establish an Operations Control Center (OCC) (and the recommendation that those not so required carry out OCC functions) is likely to require the commitment of management to be effective. Many existing communication centers have evolved and operated mostly autonomously since their inception. HAA operators may experience difficulty transitioning from the previously autonomous communication centers as an OCC comes online. Management should plan to overcome these issues through education and communication.

b. Philosophy. In is important that an HAA operator's entire organization embrace and promote a cohesive operational philosophy that provides direction for an OCC (or its functions) and the enhanced operations control procedures described in this AC. The instillation of a company philosophy that enhanced flight operations described in this AC are a team effort. They are not simply a matter of a flightcrew receiving basic flight request information and then it being the flightcrew's responsibility to complete the flight.

8-4. EMERGENCY OPERATIONS. The longer that an OCC and enhanced operations control procedures described in this AC are used, the more the organization relies upon their availability. This may result in increasing impact on the ability of the organization to continue functioning if these are interrupted.

a. Documentation. It is recommended that HAA operators prepare emergency procedures that most effectively leverage resources available to the operator, including the OCC. This will include, but may not be limited to those procedures documented by the applicable Accident Incident Plan/Post-Accident Incident Plan (AIP/PAIP). Such procedures should be prepared to provide guidance on how to carry out HAA operations in emergency or degraded capability situations and to manage the partial or total loss of critical capabilities such as OCC and enhanced operations control functions.

b. Training and Drills. It is recommended that an HAA operator conduct regular refresher training and drills to maintain the organization's ability to follow these procedures. Drills should be conducted annually at minimum; more often is preferred.

APPENDIX A. SAMPLE RISK ANALYSIS TOOLS

A-1. PURPOSE OF THIS APPENDIX. The information in this appendix is provided to assist in developing a risk analysis process. It provides examples of approaches that may be used by a helicopter air ambulance (HAA) operator to assess, mitigate, and manage risk. Additional information on risk analysis management can be found in the current edition of Advisory Circular (AC) 120-92, Safety Management Systems for Aviation Service Providers.

a. Background. Title 14 of the Code of Federal Regulations (14 CFR) part 135, § 135.617 requires preflight risk analysis to be conducted as part of the overall risk analysis and, where applicable, be supported by an operator's Operations Control Center (OCC). These requirements should be implemented within a broader framework of organizational systems, including policies, procedures, training and supervision that have been developed based on assessment of day-to-day HAA operational risks.

b. Risk Assessment. The risk assessment process should produce a quantitative result. The process involves identifying hazards associated with a proposed operation and assessing risks associated with each hazard. After risks are assessed, risk mitigation strategies can be identified, developed and implemented. If mitigations will not reduce risk to an acceptable level, a flight should not be authorized.

c. Risk Analysis Components. Risk analysis has two components that are assessed: severity (what is the worst probable outcome) and likelihood (of occurrence). Severity refers to the consequences of an event resulting from the hazard. Likelihood is an estimate of how likely the event is to occur. If the likelihood of an event is estimated to be high, and the consequences potentially severe, the risk analysis would indicate that the flight should not be operated until the identified hazards are eliminated or suitable mitigations have reduced the risk to an acceptable level.

A-2. SEVERITY AND LIKELIHOOD CRITERIA. This appendix provides some examples of one effective tool that has been used by several HAA operators and is intended to be functional for everyday operations without being cumbersome. As throughout the AC, the focus of this appendix is on the results it yields to inform regulatory required actions and it is not intended to prescribe the use of a particular methodology of process. The definitions and design of the final matrix is left to the HAA operator. The definitions of each level of severity and likelihood will be expressed in terms realistic for the individual operational environment and operator's profile. This ensures the relevance of decision tools to the operator's specific needs. An example of severity and likelihood definitions is shown in the table below.

FIGURE A-1. SAMPLE SEVERITY AND LIKELIHOOD CRITERIA

Severity of Consequences			**Likelihood of Occurrence**		
Severity Level	Definition	Value	Likelihood Level	Definition	Value
Catastrophic	Equipment destroyed, multiple deaths	5	Frequent	Likely to occur many times	5
Hazardous	Large reduction in safety margins, physical distress or a workload such that operators cannot be relied upon to perform their tasks accurately or completely. Serious injury or death. Major equipment damage.	4	Occasional	Likely to occur sometimes	4
Major	Significant reduction in safety margins, reduction in the ability of operators to cope with adverse operating conditions as a result of an increase in workload, or as result of conditions impairing their efficiency. Serious incident. Injury to persons.	3	Remote	Unlikely, but possible to occur	3
Minor	Nuisance. Operating limitations. Use of emergency procedures. Minor incident.	2	Improbable	Very unlikely to occur	2
Negligible	Little consequence	1	Extremely Improbable	Almost inconceivable that the event will occur	1

A-3. RISK ACCEPTANCE.

a. Risk Acceptance. In the development of risk analysis criteria, HAA operators are expected to develop risk acceptance procedures, including: acceptance criteria and designation of authority/responsibility for decisionmaking.

b. Acceptability of Risk. The acceptability of risk can be evaluated using a risk matrix such as those illustrated in Figure A-2. Figure A-3 shows areas with an alphanumeric scale and is an example of how risk matrices may be color-coded: unacceptable (red), acceptable with mitigation (yellow) and acceptable (green).

(1) Unacceptable (Red). Where combinations of severity and likelihood cause risk to fall into the red area, the risk would be assessed as unacceptable. A flight should not be authorized under unacceptable conditions until further controls are developed which eliminate the associated hazard or which would control the factors that lead to higher risk likelihood or severity.

(2) Acceptable with Mitigation (Yellow). When the risk analysis falls into the yellow area, risk may be accepted under defined conditions. Risk mitigation may also include consideration of alternate routes/destinations. A decision to initiate an operation should be elevated to a person responsible for Operational Control decisionmaking prior to conducting the flight. For example, landings and takeoffs at high altitude or high density altitude Landing Zones (LZ) present risks resulting from marginal aircraft performance. Risk mitigation could include load reduction or selecting a LZ at a lower altitude where aircraft performance would not be affected as significantly.

(3) Acceptable (Green). Where the assessed risk falls into the green area, it may be accepted without further action and the flight dispatched. The objective should always be to reduce risk to as low as practicable regardless of whether or not the analysis shows that it can be initially accepted.

A-4. SAFETY RISK MATRIX EXAMPLES. The operator should have written policies that define (in numerical terms) acceptable levels of risk, procedures for determining risk acceptability and steps to be taken for a given level of assessed risk, including risk control strategies. § 135.617 requires HAA operators have a documented procedure for elevating the management level required for flight approval when risk exceeds predetermined levels.

FIGURE A-2. SAMPLE "STOP LIGHT" DECISIONMAKING MATRIX

FIGURE A-3. SAMPLE RISK LIKELIHOOD/RISK SEVERITY MATRIX

Risk Likelihood		Risk Severity				
		Catastrophic A	Hazardous B	Major C	Minor D	Negligible E
Frequent	5	5A	5B	5C	5D	5E
Occasional	4	4A	4B	4C	4D	4E
Remote	3	3A	3B	3C	3D	3E
Improbable	2	2A	2B	2C	2D	2E
Extremely Improbable	1	1A	1B	1C	1D	1E

NOTE: The direction of higher scales on a matrix to represent the direction of likelihood and severity are at the discretion of the organization.

A-5. RISK ANALYSIS MATRIX EXAMPLE. The definitions and design of a risk analysis matrix is left to the HAA operator. This ensures each of the operator's decision tools is relevant to its specific needs and requirements. An example of a two-sided paper form used by one HAA operator is shown in two figures below. Note that the numbers associated with each option do not represent universal best practices, but rather represent an analysis of their meaning for that specific operator. Not only the value assigned to each factor, but the factors selected, reflect the operator's needs. For example, as in this example, an operator in an inland area would not have to consider quantification of overwater flights, while one operating on an island would have to do so.

FIGURE A-4. SAMPLE RISK ASSESSMENT MATRIX SHOWING QUANTIFICATION OF FACTORS (FIRST PAGE OF A TWO-PAGE FORM)

RISK ASSESSMENT WORKSHEET
"SHORT FORM"

Pilot: _____ Base: _____
Date _____ Mission #: _____

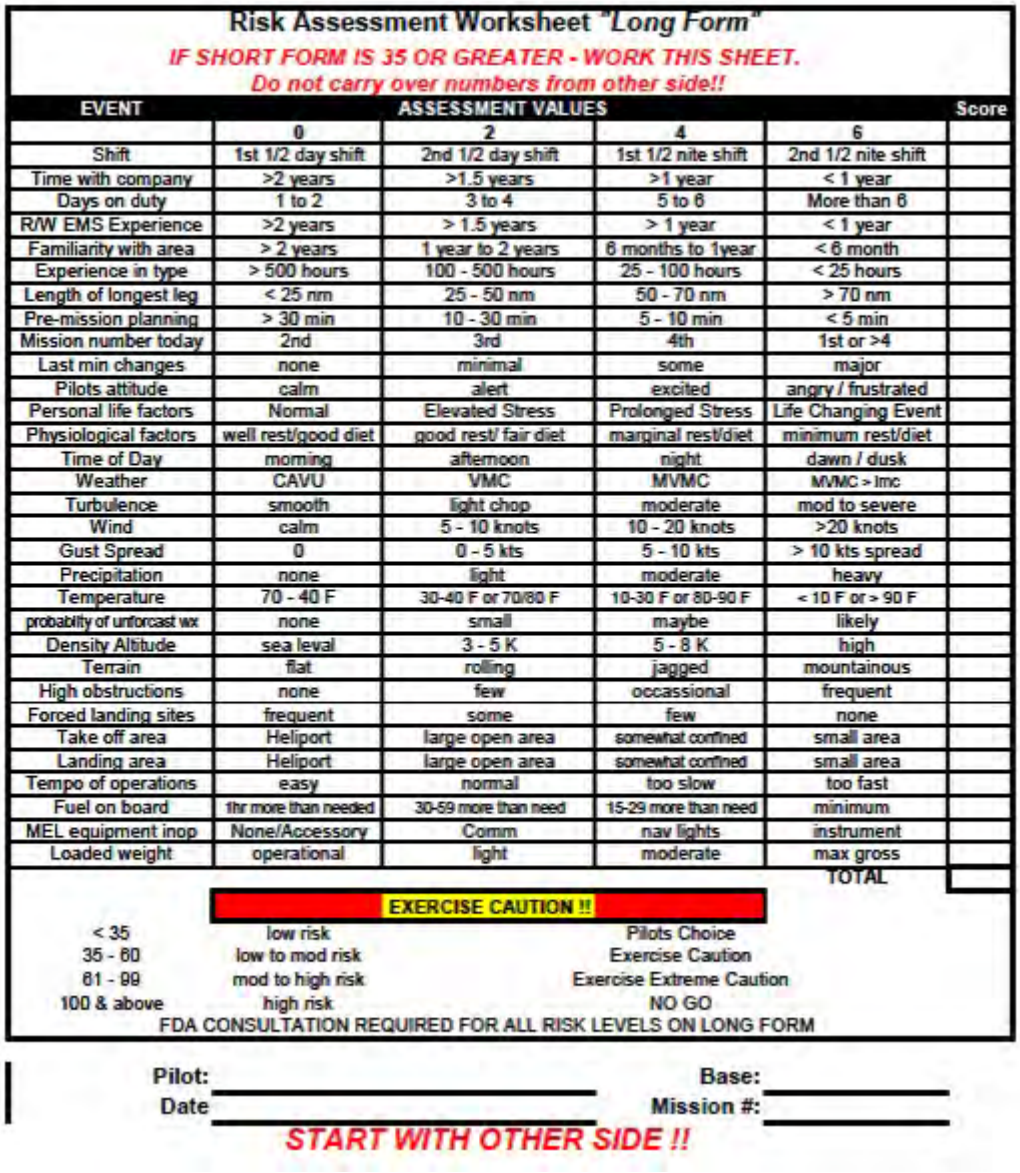
EXPERIENCE:

HAA EXPERIENCE:	*(Choose all that apply)*	
Less than 1 year	+10 points	
1-3 years	+5 points	
3-5 years	+2 points	
>5 years	0 points	
Homebase:	0 points	
Unfamiliar Area:	+10 points	
SPECIFIC TYPE EXPERIENCE:		
Less than 100 hours	+10 points	
More than 100 hours	0 points	
Unfamiliar Aircraft	+5 points	

WEATHER:	*(Choose all that apply)*	DAY:	NIGHT:	
Jagged / Mountainous Terrain		+5 points	+10 points	
Ceiling between 1000' AND 1500' AGL		+3 points	+7 points	
Ceiling less then 1000' AGL		+7 points	+15 points	
Visibility between 3 - 5 miles		+3 points	+5 points	
Visibility less then 3 miles		+7 points	+15 points	
Temperature and Dew Pt spread less than 5		+3 points	+7 points	
Wind in excess of 15 Knots		+3 points	+5 points	
Storms along route of flight		+5 points	+10 points	
MISSION:	*(Choose one)*	DAY:	NIGHT:	
All within local area		0 points	+5 points	
Any or all Cross Country		+5 points	+10 points	
			TOTAL	

If total is less than 35, flight is at your discretion!
For totals 35 or greater, fill out worksheet on reverse
CONSULT FDA ON RISK ASSESSMENTS 35 & ABOVE

FIGURE A-5. SAMPLE RISK ASSESSMENT MATRIX SHOWING QUANTIFICATION OF FACTORS (SECOND PAGE OF A TWO-PAGE FORM)



Risk Assessment Worksheet *"Long Form"*

IF SHORT FORM IS 35 OR GREATER - WORK THIS SHEET.
Do not carry over numbers from other side!!

EVENT	ASSESSMENT VALUES				Score
	0	2	4	6	
Shift	1st 1/2 day shift	2nd 1/2 day shift	1st 1/2 nite shift	2nd 1/2 nite shift	
Time with company	>2 years	>1.5 years	>1 year	< 1 year	
Days on duty	1 to 2	3 to 4	5 to 6	More than 6	
R/W EMS Experience	>2 years	> 1.5 years	> 1 year	< 1 year	
Familiarity with area	> 2 years	1 year to 2 years	6 months to 1year	< 6 month	
Experience in type	> 500 hours	100 - 500 hours	25 - 100 hours	< 25 hours	
Length of longest leg	< 25 nm	25 - 50 nm	50 - 70 nm	> 70 nm	
Pre-mission planning	> 30 min	10 - 30 min	5 - 10 min	< 5 min	
Mission number today	2nd	3rd	4th	1st or >4	
Last min changes	none	minimal	some	major	
Pilots attitude	calm	alert	excited	angry / frustrated	
Personal life factors	Normal	Elevated Stress	Prolonged Stress	Life Changing Event	
Physiological factors	well rest/good diet	good rest/ fair diet	marginal rest/diet	minimum rest/diet	
Time of Day	morning	afternoon	night	dawn / dusk	
Weather	CAVU	VMC	MVMC	MVMC > lmc	
Turbulence	smooth	light chop	moderate	mod to severe	
Wind	calm	5 - 10 knots	10 - 20 knots	>20 knots	
Gust Spread	0	0 - 5 kts	5 - 10 kts	> 10 kts spread	
Precipitation	none	light	moderate	heavy	
Temperature	70 - 40 F	30-40 F or 70/80 F	10-30 F or 80-90 F	< 10 F or > 90 F	
probability of unforcast wx	none	small	maybe	likely	
Density Altitude	sea leval	3 - 5 K	5 - 8 K	high	
Terrain	flat	rolling	jagged	mountainous	
High obstructions	none	few	occassional	frequent	
Forced landing sites	frequent	some	few	none	
Take off area	Heliport	large open area	somewhat confined	small area	
Landing area	Heliport	large open area	somewhat confined	small area	
Tempo of operations	easy	normal	too slow	too fast	
Fuel on board	1hr more than needed	30-59 more than need	15-29 more than need	minimum	
MEL equipment inop	None/Accessory	Comm	nav lights	instrument	
Loaded weight	operational	light	moderate	max gross	
				TOTAL	

EXERCISE CAUTION !!

< 35	low risk	Pilots Choice
35 - 60	low to mod risk	Exercise Caution
61 - 99	mod to high risk	Exercise Extreme Caution
100 & above	high risk	NO GO

FDA CONSULTATION REQUIRED FOR ALL RISK LEVELS ON LONG FORM

Pilot: _____ **Base:** _____
Date _____ **Mission #:** _____

START WITH OTHER SIDE !!

APPENDIX B. SAFETY MANAGEMENT SYSTEMS (SMS)

B-1. PURPOSE OF THIS APPENDIX. The information in this appendix is provided to give a helicopter air ambulance (HAA) operator information concerning the current state of safety management through an overview of safety management systems (SMS). Additional information and resources on SMS can be found in the current edition of Advisory Circular (AC) 120-92, Safety Management Systems for Aviation Service Providers. The Federal Aviation Administration's (FAA) SMS Program Office (SMSPO) provides tools to assist with implementation of the SMS Voluntary Program (SMSVP). These are intended for use by operators to achieve compliance with the safety assessment requirements of Title 14 of the Code of Federal Regulations (14 CFR) part 135, § 135.617 through implementing a formal SMS within their organization. The SMSPO can be contacted at the following Web link: http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afs/afs900/sms/.

B-2. OVERVIEW. One of the primary goals of an effective SMS is the development of a mature and positive safety culture. Internal and external audits provide assurance that processes are working as designed and continuing to be effective. While it is possible to have a positive safety culture without a formal SMS, a strong safety culture can be fostered by the implementation of an effective SMS. The constant attention, commitment, and visible involvement provided by all levels of management, combined with continuing data analysis, Safety Assurance (SA) activities and daily application of risk analysis and control techniques drive the organization toward safety culture maturity.

a. Confidential Employee Reporting Systems. Are essential components in assuring safety. They provide employee feedback for identifying new hazards and revising procedures.

b. Safety Management is a Learned Skill. Organizations do not simply adopt a software program or a set of posters and buzzwords, attend an hour of slide presentations and instantly install an effective SMS. As with any skill, it takes time, practice, repetition, the appropriate attitudinal approach and good coaching.

c. The Safety Culture Matures as Safety Management Skills are Learned and Practiced. The safety culture becomes second nature across the entire organization as trust builds and the organization functions as a team. The mature safety culture should have the following conditions to flourish.

(1) Openness. The organization encourages and even rewards individuals for providing essential safety-related information which will improve the operation.

(2) Justness. The organization takes a proactive approach toward error disclosure yet demands accountability on the part of employees and management alike. The organization engages in identification of systemic errors through root cause analysis and implements preventative corrective action. It exhibits intolerance of undesirable behavior (i.e., recklessness and willful disregard for established procedures).

(3) Involvement of All Levels of Management. This is demonstrated by:

- Formal risk analysis and resource allocation, as needed to assure mitigation of high consequence, high probability risks;
- Management action beyond rhetoric, actively involved in the decisionmaking processes and participate in safety activities; and
- Strong SA, combined with safety data analysis processes, yielding information, are used to drive risk reduction. An informed organization can take appropriate action to prevent accidents.

(4) Training. This includes training in threat recognition, error management and SMS, SA and Safety Risk Management (SRM) techniques.

(5) Flexibility. The organization uses information effectively to adjust and change in an effort to reduce risk. All aspects of the organization are under constant review and adjustment to meet changing demands.

(6) Learning. The organization learns from its own failures and those of similar operations. The organization uses acquired data to feed analysis processes, which yield information that can be, and is, acted upon to improve safety. Organizational behavior is modified accordingly. Actual practices are based upon accurate and validated information.

d. Accountability. To foster the development of a mature organization with a positive safety culture, an accountable executive must be in place.

(1) The accountable executive is the person who is the final authority over operations, controls, financial and human resources and retains ultimate responsibility for safety performance of the operation.

(2) All of the management staff, at all levels, should convey, enhance and emphasize the organization's safety policy through exemplifying the policy in their daily work and in their one-on-one leadership styles. Decisionmaking should be kept at the lowest level appropriate to the complexity and criticality of the decision. Line managers are the people that own the process. They are in the best position to make appropriate changes. Senior management, including the accountable executive, should monitor actions and provide guidance.

B-3. SAFETY MANAGEMENT SYSTEM (SMS) TOOLS.

a. SMS. The FAA has developed tools for implementing a SMS that are scalable and customizable to operators' size, scope and environment. Two key components of a SMS are SRM and SA. Refer to the current edition of FAA Order 8040.4, Safety Risk Management Policy, for more information. An operator that implements safety management practices using a SMS will have these components integrated into its operations. While current regulations do not require implementation of an SMS, voluntary implementation is encouraged.

b. Risk Analysis. Risk analysis is how an operator provides each pilot-in-command (PIC), Operations Control Specialist (OCS) and others involved in the decisionmaking process with a shared set of documented processes that have been the subject of training to identify conditions (hazards), which if not addressed could foreseeably cause an aircraft accident. This allows an

informed process to reduce associated risks by implementing appropriate processes and controls. Risk analyses should also be performed under the following conditions:

(1) Implementation of new systems.

(2) Revision of existing systems.

(3) Development of operational procedures.

(4) Identification of hazards or ineffective risk controls through audits conducted through SA processes.

c. Systems.

(1) In the context of this AC, "systems" are limited to those processes and their associated personnel, facilities, tools, documentation and other resources that are needed to accomplish HAA-related functions.

(2) Every part 135 operator has a number of aviation-related "systems" such as flight operations, maintenance and inspection (frequently called "technical operations"), operational control and dispatch, medical and ground operations. Within these systems, many lower level processes and ancillary systems exist, such as training, fueling, biohazard decontamination, individual station operations and others.

d. Changes to Operations.

(1) Changes to a HAA operators operation could include the addition of new routes, opening or closing of line stations, adding or changing contractual arrangements for services, the addition of new aircraft types or major modifications to existing aircraft, addition of different types of operations such as night vision goggles (NVG) usage or any one of many different types of operations.

(2) Any of these additions or changes would trigger the use of an SRM process to determine if new hazards appear that would require incorporation of mitigations to reduce risk. In many, if not most, cases, those controls will entail revision or addition of procedures and training for personnel engaged in the operation of the systems. For example, if a HAA certificate holder intends to implement NVG operations, they will need to organize their flight operations, maintenance, training and operational control systems to comply with the applicable regulations and guidance to ensure the NVGs are safely integrated into operations. They will also need to develop and document procedures for employees involved in those systems' activities.

(3) In most cases, these procedures will be documented in the service provider's manual system. The baseline for determining acceptable levels of safety for all service providers should be the existing regulatory standards, as applicable. Some mitigations and changes to the operation may require approval or acceptance by the FAA. The SA component provides processes for validation of the organizational processes and effectiveness of risk controls, once they have been implemented as the result of a risk analysis.

APPENDIX C. HAA OPERATOR PILOT TRAINING PROGRAM AND CHECKING EXAMPLES

C-1. GENERAL. This appendix addresses, by providing examples, recommended approaches to the thorough ground and flight training and checking essential in the preparation of a pilot to safely assume the duties of a pilot in command (PIC) of a helicopter air ambulance (HAA). As in the other appendices, these are included as examples rather than being prescribed as an optimal solution. Following are some of the subjects that best practices of HAA operators have indicated should be addressed.

C-2. PILOT GROUND TRAINING – SAMPLE CURRICULUM OUTLINE. The focus of this curriculum is to outline topics specific to HAA operations.

A. Airman:
   1. PIC Responsibility.
   2. PIC Authority.
   3. Flight and Duty Time.

B. General:
   1. Definitions.
   2. Hours of Operation.
   3. Authorized Passengers.
   4. Infection Control.
   5. Cameras.

C. Preflight/Departure:
   1. Visual Flight Rules (VFR) Flight Planning.
   2. Base Flight Planning Documents and Material.
   3. Weather Minimums – General.
   4. Weather Minimums – Area of Operations Considerations.
   5. Minimum Safe Cruising Altitudes (Operations Specification (OpSpec) A021).
   6. Operations in High Wind Conditions.
   7. Wind Requirements.
   8. Local Flying Areas (LFAs).
   9. LFA Pilot Testing/Examination Procedure.
   10. Use of (Night Vision Imaging System (NVIS)) aided Minimums.
   12. Weather.
   13. Turndowns by Other Operators (and identifications of reason).
   14. Routes of Flight - Single-Engine Helicopters.
   15. Instrument Flight Rules (IFR) Operations (HAA-Specific Rules).

D. Operations Control Center (OCC):
   1. Risk Matrix.

E. Refueling:
   1. Engine(s) Off/Rotors Stopped.
   2. Helicopter Rapid Refueling (HRR).

F. Safety Briefing of Passengers/Medical Crew Members.
G. Initial Medical Crewmember Training:
   1. General.
   2. Training Program Contents/Requirements.

H. Crew Resource Management (CRM):
   1. Crew Concept.
   2. Pilot in Command (PIC).
   3. Medical Crew.

I. Flightcrew Member Duties:
   1. Pre-Launch Walk-Around.
   2. Sterile Cockpit.
   3. Engine Start.
   5. Takeoff.
   6. En Route/Cruise.
   7. Before Landing (Prior to 2-Minute Estimated Time of Arrival (ETA)).
   8. Arrival at the Intended Point of Landing.
   9. Crew Callouts.
   10. Aircraft Emergencies.

J. Crew Change:
   1. Crew Change Operational Briefing Subjects.
   2. Safety Precautions.

K. Patient Safety:
   1. Loading and Unloading (engines running/secured).
   2. Children/Infants.

L. Use of Seat Belts and Restraints:
   1. Seat Belts and Shoulder Harnesses.
   2. Infants and Pediatric Patients.
   3. Aircraft Doors.

M. En Route:
   1. Flight Plans and Flight Locating.
   2. Position Reports.
   3. Remote Area Communications.
   4. Obstacles (including Wind Turbine Farms Wake Turbulence).

N. Arrival:
   1. Landing Site Requirements.
   2. Unimproved Landing Sites.

O. Equipment Familiarization (Securing, Storage, Weight and Balance (W&B), Loading):
   1. Stretchers.
   2. Isolettes.
   3. Portable O_2.

4. Balloon Pumps.
5. Ventilators.
6. Miscellaneous Equipment.

P. Emergency Procedures:
1. Emergency Evacuation Duties.
2. Hazardous Material Operations.

Q. Hazardous Patient Transport.

R. Public Relations Events:
1. Crew Duties – PR Events.
2. Landing Zone (LZ) Safety and Security.

C-3. PILOT FLIGHT TRAINING – SAMPLE CURRICULUM OUTLINE.

A. Module 1:
1. Preflight Procedures:
   a. Med Crew Briefing.
   b. Noise Abatement.
   c. Hover/Ground Taxi Operations.
2. Takeoff and Departure Phase:
   a. Normal/Crosswind.
   b. Sidestep.
   c. Maximum Performance.
   d. PC2 (If Applicable).
3. Cruise:
   a. Navigation.
   b. Communication.
   c. Severe Weather Avoidance.
   d. Maintaining Situational Awareness.
   e. Helicopter Terrain Awareness and Warning System (HTAWS).
4. Approach and Landing:
   a. High Reconnaissance.
   b. Low Reconnaissance.
   c. Ground/Hazard Recognition.
   d. Normal/Crosswind.
   e. Sidestep.
   f. Confined Area/Steep Approach.
   g. PC2 (if applicable).
   h. Special Conditions (including Flat Light/Brownout/Whiteout Ops and Multi-Aircraft Situations).
5. Emergency and Abnormal Situations.
6. Post-Flight Procedures:
   a. Crew Debriefing.
   b. Post-Flight Inspection.

c. Cleaning/Decontamination of Aircraft and Equipment (biohazards).
d. Servicing O_2 Systems.

C-4. EXAMPLE OF COMPETENCY-PROFICIENCY CHECK EVALUATION SHEET FOR HAA PIC.

FIGURE C-1. EXAMPLE OF CHECK SHEET FOR PIC (NOTE: THIS EXAMPLE PRE-DATES RULE CHANGES EFFECTIVE 4/22/2015)

AIRMAN COMPETENCY/PROFICIENCY CHECK
HELICOPTER

NAME OF AIRMAN (Last, First MI)		LOCATION:		DATE OF CHECK		
		MEDICAL INFO:		TYPE OF CHECK		FLIGHT TIME:
Certificate Number	Type	Date of Birth:		135.293	-	IFR/Hood 0.0
	-	Date of Exam:		135.297	-	NVG 0.0
		Class:	-	135.299	-	DAY 0.0
Aircraft Type:	-	Position Checked	-	NVG	-	NIGHT 0.0
Aircraft/Simulator ID:		Seat Flown	-	RESULT	-	TOTAL 0.0

FLIGHT MANEUVERS GRADE (U-UNSATISFACTORY, S-SATISFACTORY, RS-RETRAINED SATISFACTORY)

		GROUND OPERATIONS	U	S
1	*N+	Equipment Examination (Oral or Written)	-	-
2	*N+	Preflight Inspection	-	-
3	*N+	Start Procedures	-	-
4	*N+	Pre-Takeoff Checks	-	-
		TAKEOFF AND DEPARTURES		
5	*N	Taxiing and Ground Hover	-	-
6	*N	Normal /Crosswind - Takeoff & Landing	-	-
7	*N	With Simulated Power plant Failure (ME Only)	-	-
8	*N	Rapid Deceleration (Quick Stops) - Rejected Takeoff	-	-
		MANEUVERS		
9	*N	Slope Operations	-	-
10	*N	Takeoff - OEI	-	-
11	*N	Landing - OEI	-	-
12	*N	Confined Areas/Pinnacles/EMS Ops.	-	-
13	*N	Autorotation to a Power Recovery (SE Only)	-	-
14	*N	Hovering Autorotation (SE Only)	-	-
15	*N+	System Malfunctions	-	-
16	*N	Anti-Torque System Failure (Oral Only)	-	-
17	*N	Tail Rotor Failure (Oral Only)	-	-
18	*N+	Settling With Power (Oral Only)	-	-
19	*N	Dynamic Rollover (Oral Only)	-	-
20	*N	Low Rotor RPM (Oral Only)	-	-
21	*N	Unusual Attitude Recovery	-	-
22	*N	Inadvertent IMC Procedures (Record approach as appropriate)	-	-
		GENERAL		
23	*N+	Judgment	-	-
24	*N+	Crew Coordination	-	-
25	N	Ground Hazard Recognition	-	-
26	N	Use of External Lights	-	-
27	N	Whiteout/Brownout/Fist Light	-	-
28	*N+	Use of Auto Pilot if Installed	-	-
29	*+	Partial Panel (If no standby instruments)	-	-

		INSTRUMENT PROCEDURES			U	S
30	+	Instrument Takeoff			-	-
31	+	Area Departure (Initial Only)			-	-
32	+	Holding (Initial Only)			-	-
33	+	Steep Turns (Initial Only)			-	-
34	+	Area Arrival (Initial Only)			-	-
		PRECISION APPR (ILS/LPV<300')	Airport ID	Appr ID		
35	+	Manual(or OEI #37)			-	-
36	+	Autopilot (Coupled)			-	-
37	+	OEI Manual (ME Only)			-	-
38	+	Landing From ILS			-	-
		GPS/RNAV EQUIPMENT	#1	#2		
39	+	TYPE:	-	-	-	-
		NON PRECISION APPROACHES		Appr ID		
40	+	Manual TYPE:	-		-	-
41	+	Coupled TYPE:	-		-	-
		CIRCLING and MISSED APPROACHES				
42	+	Circling TYPE:	-	-	-	-
43	+	Missed TYPE:	-	-	-	-
44	+	Missed TYPE:	-	-	-	-

135.293 check substituted for recurrent training per 135.351(C)		-
Aircraft Specific CTS corrected to 100%		-
Local Area Knowledge test completed		-
Base(s) tested:		

AIRMAN COMPETENCY INFORMATION

Demonstrated Current Knowledge FAR135.293(a)	(1,4-8)	-		
	(2-3)	-		
Base Month	-	12 Months Expires	-	
Demonstrated Competency FAR 135.293(b)				
Base Month	-	12 Months Expires	-	
Satisfactory Demonstrated Line Checks FAR 135.299				
		12 Months Expires	-	
Satisfactory Demonstrated IFR Proficiency FAR135.297				
Base Month	-	6 Months Expires	-	
Use of Autopilot 135.297(G)		12 Months Expires	-	
Satisfactory Demonstrated NVG Proficiency				
Base Month	-	12 Months Expires	-	
Check Airman & Instructor Techniques Observed				
Observation	-	24 months Expires	-	

REMARKS

Name of Check Airman:	
Signature of Check Airman:	

NOTE: (*) Required for .293 qualification (+) required for .297 qualification (N) required for NVG qualification

Region:		District Office:		FAA Insp. Sign:		Check Airman Performance	-	FAA ONLY

§ 135.609 – VFR Ceiling And Visibility Requirements For Class G Airspace.

§ 135.609 – VFR ceiling and visibility requirements for Class G airspace.

[Doc. No. FAA-2010-0982, 79 FR 9975, Feb. 21, 2014; Amdt. 135-129A, 79 FR 41126, July 15, 2014]

(a) Unless otherwise specified in the certificate holder's operations specifications, when conducting VFR helicopter air ambulance operations in Class G airspace, the weather minimums in the following table apply:

Location	Day		Night		Night using an Approved NVIS or HTAWS	
	Ceiling	Flight Visibility	Ceiling	Flight Visibility	Ceiling	Flight Visibility
Nonmountainous local flying areas	800-feet	2 statute miles	1,000-feet	3 statute miles	800-feet	3 statute miles
Nonmountainous non-local flying areas	800-feet	3 statute miles	1,000-feet	5 statute miles	1,000-feet	3 statute miles
Mountainous local flying areas	800-feet	3 statute miles	1,500-feet	3 statute miles	1,000-feet	3 statute miles
Mountainous non-local flying areas	1,000-feet	3 statute miles	1,500-feet	5 statute miles	1,000-feet	5 statute miles

(b) A certificate holder may designate local flying areas in a manner acceptable to the Administrator, that must—

(1) Not exceed 50 nautical miles in any direction from each designated location;

(2) Take into account obstacles and terrain features that are easily identifiable by the pilot in command and from which the pilot in command may visually determine a position; and

(3) Take into account the operating environment and capabilities of the certificate holder's helicopters.

(c) A pilot must demonstrate a level of familiarity with the local flying area by passing an examination given by the certificate holder within the 12 calendar months prior to using the local flying area.

From: Brian Thomas
To: Steve Eckler; kbennett@bsk.com
Subject: FW: SEQR review input
Date: Monday, June 11, 2018 10:12:59 AM
Attachments: Frank Montecalvo.docx

Another SEQRA scoping comment . . . . .

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
Utica, New York 13502
(315) 792-0181 phone
(315) 797-6607 fax

From: Menuez-Commerford, Marcia [mailto:mmenuez@mwpai.edu]
Sent: Monday, June 11, 2018 10:10 AM
To: Brian Thomas <bthomas@cityofutica.com>; Mayor <Mayor@cityofutica.com>
Subject: SEQR review input

Dear Mr. Thomas,

Thank you for the opportunity to give an opinion regarding the MVHS hospital project & the SEQR review process.

My husband and I live just off Oneida Square and consider ourselves as long-term "downtown" residents.

We are adamantly opposed to the siting of the new hospital downtown. The city can't afford it. It is a a pathetically obvious ploy to acquire parking for the auditorium and potential U center. St. Luke's was the original and correct site.

I am attaching a document that explains just why this process is being so badly handled. You have seen this

document before. Please read it. I know it is long. It is a beautifully thought out piece of reasoning and anyone who cares for our city should take this to heart. Mr. Montecalvo is a retired administrative judge for the NYS department of the environment. It is safe to say he knows what he is talking about.

If you have any conscience, exercise it now. Help stop this ill-considered debacle in its tracks.

Sincerely,
Marcia Menuez-Commerford

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Marcia Menuez-Commerford

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June 7, 2018

City of Utica Planning Board
1 Kennedy Plaza
Utica, NY 13502
Attention: Mr. Brian Thomas, Commissioner
City of Utica, Department of Urban & Economic Development
Ref: Draft Scoping Document, MVHS Proposed Downtown Hospital

Dear City of Utica Planning Board:

This letter is in response to the Utica Planning Board's request for public comment on the above-referenced Draft Scoping document. As detailed below, the Draft Scope contains incorrect and misleading statements, omits relevant information, and dismisses or fails to mention the need to develop certain topics in the Environmental Impact Statement (EIS). Without correction and further definition in the Final Scope, the EIS will provide involved agencies with an inaccurate, misleading, and incomplete picture of the proposed project upon which to base their SEQR findings "that consistent with social, economic and other essential considerations, to the maximum extent practicable, adverse environmental effects revealed in the environmental impact statement process will be minimized or avoided." (Environmental Conservation Law 8-0109 (8)). To ease reference, the discussion below applies the labels found in the Draft Scope.

Section 1.2 Project Purpose

(A) The Applicant failed to identify the purpose(s) to be served by locating its project in Downtown Utica as opposed to the other sites it considered. The public has been told numerous times that Mohawk Valley EDGE used the Applicant's criteria to produce the site selection study upon which the Applicant's choice of the Downtown location was based. That study is still secret, so the public still does not know the Applicant's criteria. Applicant's spokesperson, Mr. Scholefield,

has advised that the site selection study would be made public as part of the SEQR process (eg., video at the 20:00 mark found at **Http://Www.Uticaod.Com/News/20180509/Compassion-Coalition-Mvhs-Deal-Unclear**). That time has now arrived and the siting study should be included in the EIS as an appendix.

Montecalvo to Planning Board 6/7/2018 Page 2

(B) Page 3 of the Draft Scope incorrectly states that "[t]he new MVHS IHC and hospital will replace the St. Luke's and SEMC campuses" and "consolidate patient services to one campus." As acknowledged elsewhere in the Draft Scope, MVHS will retain certain patient services at both St. Luke's and SEMC campuses. Not disclosed is MVHS' retention of the 202-bed skilled nursing facility (formerly called the St. Luke's Home) on the St. Luke's Campus. Although some functions from two buildings will be combined into a new building at MVHS IHC, significant patient services will be retained at the old sites, making the characterization of the project quoted above incorrect and misleading. There is no replacement of the SEMC and St. Luke's Campuses. Rather, the MVHS IHC Downtown campus is being added to the Applicant's responsibilities, potentially threatening its financial stability.

(C) The Applicant claims existence of a "growing demand for healthcare due to the rapidly increasing and aging population in this region." Applicant needs to substantiate this claim with actual numbers of people (not percentages). US Census statistics indicate that regional population continues a decades-long decline and the number of people in Utica over 65 years old has also declined.

(D) Applicant needs to substantiate how a new facility will attract specialists to our region when the prerequisite for specialists is a sufficient population base to make doctor specialization economically feasible. Our population is declining.

(E) Although Applicant references Public Health Law 2825-b which indicates that the purpose of the State Grant is to "consolidate multiple licensed health care facilities into an integrated system of care" the Applicant omitted any explanation of how its project meets the grant's objective. The explanation is needed because Applicant's proposal to move the hospital structure away from the retained services at the old sites (particularly the removal of the hospital from the St. Luke's Campus that will continue to hold a nursing home and rehab facility) seems to directly oppose the intent of the legislation. In addition, the removal of the hospital from the St. Luke's Campus to Downtown will place at least 2 miles between the new facility and the existing de facto "medical district" composed of the numerous medical providers that have recently located near St. Luke's along Burrstone and French Roads in New Hartford and in the Utica Business Park, including an outpatient surgical center. Because they are recent, these providers are unlikely to follow the hospital Downtown. Increasing the distance between the hospital and these providers seems contrary to good patient care.

Section 1.3 Project Description

A. Although the project description mentions the acreage of private property that Applicant will need to acquire, it fails to disclose that this will involve displacement and/or loss of approximately 40 businesses/not-for-profits and the Utica Police Garage, permanent loss of taxable properties, and the permanent loss of properties that have in-place the public infrastructure and zoning needed to support small business development. Arguably these are the best properties for small businesses in the region due to their location in Utica's Central Business District. Utica will lose current tax revenue, important social services, jobs, and opportunities to grow jobs and its tax-base in the future. Neither the Draft Scoping Document nor any of the Application documents make any attempt to estimate the sales tax currently generated within the project area that will be at risk, to estimate the cost to duplicate the police garage off-site, to estimate the

cost to duplicate off-site the public infrastructure now available for entrepreneurial growth, to estimate the non- hospital jobs currently within the project area that will be lost, or estimate the cost to duplicate lost businesses and not-for-profits elsewhere. Based upon the history of actual projects in Utica and Rome, most of the small businesses and their jobs will be lost. Although the Applicant will be liable for only a small fraction of these losses, they are real and represent a regional social and economic cost of the proposed project that will fall upon individuals, business owners, and taxpayers. State and local governments have spent literally hundreds of millions of dollars to create a relative handfull of jobs locally. Will we have to spend such huge amounts again just to make up for the jobs that this project will consume? The Applicant needs to clearly state what it is asking Utica and the region to risk in exchange for Applicant locating its proposed state-of-the-art health care facility in Downtown Utica.

B. The Draft Scope erroneously claims that +/- 373 inpatient beds will be transitioned to MVHS IHC in Downtown Utica. That statement is contradicted by the NYS Department of Health's Needs Analysis, which states that 24 of those beds will remain at the St. Luke's Campus for Physical Medicine and Rehab. That means that the MVHS IHC will only transition 349 beds to Downtown Utica. The Final Scope needs to contain an accurate description.

C. The Draft Scope indicates that the proposed project will involve construction of approximately 2650 parking spaces, or greater than

7.5 spaces per hospital bed. This far exceeds the design requirements used elsewhere (e.g., Houston, TX 2.2 per bed; Palm Beach County, FL

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1 space per 2 beds; St. Paul, MN 0.5 spaces per bed). Every space impacts the environment. Unneeded spaces create unnecessary impacts. The EIS needs to

substantiate the number of parking spaces planned. D. Applicant's description of disposition and re-purposing of existing hospital campuses is unacceptably vague given the region's history of blight caused by the abandonment of hospital buildings at the Central New York Psychiatric Center. The EIS must contain assurances that Applicant's abandonment of facilities will not create new blight in South Utica and New Hartford. As mitigation, consideration should be given to requiring MVHS to post a performance bond to fund continued maintenance and/or demolition of the abandoned hospital buildings if they are not repurposed within an appropriate specified time period.

E. Given that Applicant proposes to abandon its hospital tower at St. Luke's and/or change its use, it must be determined whether Utica's decades-old agreement to provide fire protection for the building will still apply or whether that responsibility and cost will fall upon the Town of New Hartford.

Section 1.4 Potentially Significant Adverse Environmental Impacts The Draft Scope needs expand to include the following information under the following "Environmental Topics":

A. Impact on Surface Water: Utica currently has a number of combined sewers and combined sewer overflows which pass untreated sewage and/or tainted runoff directly into the Mohawk River, bypassing the Water Pollution Control Plant, during periods of wet weather. (1) The new hospital building will produce a volume of raw sewage concentrated at one location. (2) The acres of new parking will produce a volume of tainted runoff. Both will empty in an area of Utica where sewer infrastructure is old and likely to combine stormwater and wastewater. The EIS needs to identify the routes wastewater and runoff from the proposed project will take to their ultimate point of disposal in the Mohawk River, whether the sewers same will pass through are separate, combined, or both; whether they are adequate to handle the flows calculated; and whether or not any wastewater or tainted runoff will bypass the Water Pollution Control Plant and enter the River untreated. Flows from the proposed "U- District" adjacent to the hospital site should also be considered as a cumulative impact. Relocating the proposed project to the St. Luke's Campus should be considered to avoid these and new all surface water impacts (see "E" under Section 1.9 Reasonable Alternatives below).

B. Impact on Groundwater: Relocating the proposed project to the St. Luke's Campus should be considered to avoid all new groundwater impacts (see "E" under Section 1.9 Reasonable Alternatives below).

C. Impact on Flooding: Flooding is dismissed as an issue by the Applicant based upon the project area not being within a floodway or 100/500 year floodplain as shown on federal maps. However, the lack of a floodway designation does not eliminate flooding as a substantive and significant issue. On July 1, 2017, significant flooding (causing abandonment of cars, risk to human life, and property damage) occurred on a newly reopened section of the North- South Arterial and adjacent Lincoln Avenue in an area labeled "area of minimal flood hazard" on the federal map. Per media reports State DOT officials claimed that their drains worked properly but indicated there was insufficient capacity in the stormsewers or receiving stream to prevent the flooding from occurring. This flooding occurred approximately one half-mile from and at a higher elevation than the project site. The project description in the Draft Scope indicates that some storm sewers will be removed, some existing will be used, and others will be constructed with a connection to the State DOT stormsewer line. The proposed project will create acres of new, unbroken pavement (i.e., less able to retain/slow runoff than a patchwork of old/broken pavement, sidewalks, roofs, yards, etc.). Applicant's mere claim that the proposed project will increase pervious surfaces does not resolve the question. Given the proximity of the project area to a known area of urban flooding, the potential that some of the same overwhelmed systems may be depended upon to carry away storm water from the project site, the likely increase in amount and speed of runoff from new pavement (which would increase water depth wherever flow is impeded), and the potential of risk to human life and property, the EIS must contain calculations of the amount of runoff from the project site using appropriate design criteria, and identification and assessment of the capacities of the systems/streams that will be used to convey runoff away from the project site without creating new problems downstream. Runoff from the proposed "U-District" adjacent to the

hospital site should also be considered as a cumulative impact. Relocating the proposed project to the St. Luke's Campus should be considered to avoid all potential flooding impacts (see "E" under Section 1.9 Reasonable Alternatives below).

D. Impact on Air: The proposed project will close portions of several streets including Cornelia (which connects Oriskany Boulevard with Court St.) and Lafayette (which connects Bleecker St. from East Utica with portions of West Utica), forcing drivers on these streets to detour over non-direct routes, lengthening their trips, increasing

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traffic, and resulting in corresponding increases in air-pollution. The hospital itself will be a new traffic and air pollution generator. Cumulative impacts from anticipated projects nearby also need to be addressed. These impacts on air should be assessed in the EIS. Relocating the proposed project to the St. Luke's Campus should be considered to avoid the operational impacts to air, and minimize the numbers of persons exposed to construction impacts to air (see "E" under Section 1.9 Reasonable Alternatives below).

E. Impact on Aesthetic Resources including Lighting: Relocating the proposed project to the St. Luke's Campus will minimize both construction and operational impacts (see "E" under Section 1.9 Reasonable Alternatives below).

F. Impact on Historic and Archeological Resources: Relocating the proposed project to the St. Luke's Campus will completely avoid impacts to Historic and Archeological Resources (see "E" under Section 1.9 Reasonable Alternatives below).

G. Impact to Transportation: The proposed hospital will generate new traffic for Downtown that may exceed street capacity, particularly when considered

cumulatively with other projects anticipated nearby. Traffic will be exacerbated by the project's proposed street closures described at D. above. Relocating the proposed project to the St. Luke's Campus will avoid all the operational transportation impacts and minimize most construction impacts (see "E" under Section 1.9 Reasonable Alternatives below).

H. and I. Impacts on Utilities and Impacts on Energy: Applicant fails to disclose, and the EIS needs to address, the impact of the proposed project on the Applicant's Co-Generation Facility recently constructed on the St. Luke's Campus but shared with Utica College, whether it will remain economically viable, or whether the power capacity will be wasted when the hospital tower is shut down. Cumulative impacts to Utilities and Energy from anticipated projects nearby also needs to be considered. Relocating the proposed project to the St. Luke's Campus will minimize the need to reconfigure utilities (water, sewer, electric) and the impacts from doing so (see "E" under Section 1.9 Reasonable Alternatives below).

J. Impact on Noise and Odor: Relocating the proposed project to the St. Luke's Campus can be expected to minimize construction impacts, and avoid operational impacts since the need to demolish old buildings and remove old public infrastructure and contaminated soil and debris would be minimized(see "E" under Section 1.9 Reasonable Alternatives below).

K. Impact on Human Health: Although the Applicant makes reference to the CSX Railroad Tracks about 900 feet north of the project site, the existence of an Oneida County Comprehensive Emergency Management Plan, and expected coordination with various Emergency Response entities, Applicant fails to mention that Bakken crude oil is regularly transported over railroad tracks within a half-mile of the project site, that accidents have occurred in the past on these tracks, and that when accidents involving such cargo occur, evacuation within a

half mile of the accident site is often necessary. Although the probability of such an accident may be considered by some to be remote, the consequences can be disastrous, as demonstrated by the 7/6/2013 Lac-Mégantic, Quebec accident. These unstated facts substantiate that an issue exists. The potential consequences make the issue significant. Given the potential risk to human life, the EIS must contain an assessment of whether or not an evacuation of what will become Greater Utica's only hospital will be feasible in the event a Lac-Mégantic-style accident were to occur. If evacuation is determined to be feasible, an evacuation plan should be included as an Appendix to the EIS. Relocating the proposed project to the St. Luke's Campus, which is out of the danger zone, would avoid this particular potential impact to human health. It will also avoid introducing the new impacts already mentioned in the Draft Scope into the Downtown Utica neighborhood(see "E" under Section 1.9 Reasonable Alternatives below).

L. Consistency with Community Character and Plans: Applicant fails to disclose that the site of the proposed project lies within the Gateway Historic Canal District (an area bounded by Genesee, State and Columbia Streets and the CSX Tracks) which has its own specific master plan, that said plan recommended amendment of the zoning regulations for the district to encourage mixed-uses by establishing building-form requirements, that the Utica Planning Board unanimously recommended approval of the zoning amendment, that the Oneida County Planning Department recommended approval of the amendment, and that on 3/16/2005 the Utica Common Council unanimously approved the amendment. This neighborhood-specific plan and building-form requirements are consistent with the more general Utica Master Plan approved by the Council in 2011 which envisions mixed uses and "walkability" Downtown. Because they have been approved by the Common Council, it is understood that these plans and requirements are binding on the Planning Board and all who propose building within this district, and cannot be overridden with a mere site plan approval. Based upon Applicant's plans revealed to the public thus far, the proposed project materially conflicts with these officially approved/adopted plans and goals. Furthermore, since the existing street grid was established by city ordinances over the years, Applicant's proposal to close portions of streets for the proposed

project also presents a "material conflict" with the community's plans and goals as officially adopted. Per 6 NYCRR 617.4(vi), these material conflicts are per se a substantive and significant adverse environmental impact that either must be mitigated by redesign of the proposed project to conform to the aforesaid requirements, or avoided by relocating the proposed project to either the St. Luke's Campus or the Psych Center Campus (see "E" under Section 1.9 Reasonable Alternatives below). M. Impacts on Solid Waste Management: Relocating the project to the St. Luke's Campus will minimize impacts related to demolition.

N. Environmental Justice: The proposed project not only threatens the continued existence of non-hospital jobs in this environmental justice neighborhood, but also threatens several charitable services located there. Relocation of the proposed project to either the St. Luke's Campus or the Psych Center Campus would totally avoid these impacts.

Section 1.5 Cumulative Impacts The EIS needs to develop the information on cumulative impacts identified at Section 1.4 A, C, D, G, H and I above, all of which could be avoided by relocating the proposed project to either the St. Luke's Campus or the Psych Center Campus(see "E" under Section 1.9 Reasonable Alternatives below).

Section 1.6 Unavoidable Adverse Environmental Impacts Determination of unavoidable impacts must be made with reference to both the St. Luke's Campus and Psych Center Campus as reasonable alternative sites to allow a comparison regarding which site better minimizes or avoids adverse environmental impacts. Involved agencies will not have a sound basis for their SEQR findings without this information. For the reasons explained at "E" under Section 1.9 Reasonable Alternatives below, it is believed that the St. Luke's Campus best minimizes or avoids adverse environmental impacts.

Section 1.7 Irreversible and Irretrievable Commitment of Resources The EIS summary should include the existing streets and other public infrastructure that will be removed; the buildings to be demolished including the police garage; the businesses and associated jobs, income and personal wealth that will be lost; the loss of taxes (property and sales) to local jurisdictions; and the lost potential for Utica to grow jobs and tax base through conversion of developable acreage into parking lots and hospital related structures. This topic

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should also include a similar summary for the St. Luke's Campus and the Psych Center Campus alternatives to permit a comparison to be made.

Section 1.8 Growth Inducing Aspects

This section of the EIS should include (A) consideration of "negative growth" with associated impacts (the spread of blight and waste of community resources), (B) discussion of whether the intent of the State's Smart Growth Policy (Environmental Conservation Law Article 6) will be implemented, and (C)substantive evidence and reasoned elaboration to back up conclusions rather than speculation and forward looking statements. Currently available information suggests that the proposed project, when completed, will exacerbate the region's negative population trends through the destruction of jobs. Hospital jobs will be reduced due to the reduction in hospital beds from 571 to 373 (see the NYS Department of Health's Needs Analysis). Most non-hospital jobs (as yet uncounted) associated with the approximately 40 entities currently within the downtown hospital footprint will disappear based upon the 90%+ closure rate experienced by Rome, NY businesses previously in the footprint of its Ft. Stanwix urban renewal project. The proposed project's occupation of 25 Central Business District Acres, primarily for parking, not only will remove this acreage from private development but also drive up the cost of remaining CBD property by restricting supply. That will discourage new startups and the creation of new jobs.

Meanwhile the City of Utica will be burdened with providing municipal services to new facilities that do not generate taxes, raising taxes for everyone else and making Utica less attractive for investment. The excessive parking facilities will foster more dependency on the automobile. Simply put, the proposed project will replace an urban neighborhood that contributes to its upkeep with suburban sprawl that will not. The EIS needs to not only address these concerns, but also acknowledge that they could be minimized by placing the new facility on the St. Luke's Campus.

Section 1.9 Reasonable Alternatives

A. This section of the Draft Scope repeats the inaccurate, misleading statements and omissions addressed in "Section 1.2 Project Purpose" above. My comments there are incorporated here by reference. Please correct these elements in the Final Scope.

B. In its Certificate of Need Application, Applicant has interpreted the State's Grant as requiring a site within Oneida County's "largest population center" by appending the words "which is Utica" that do not appear in the law. Applicant now, inconsistently, lists the St.

Luke's Campus (in New Hartford) and the New Hartford Shopping Center as "reasonable alternatives" to be considered. Since it would be "unreasonable" for agencies to consider alternate sites that do not qualify for the Grant, the listing of New Hartford sites as "reasonable alternatives" should be construed as both a waiver of future arguments that the legislation requires the proposed project to be within Utica, and as an admission that the identified sites in New Hartford are located "within the largest population center" of Oneida County.

C. The New Hartford Shopping Center must be rejected as a "reasonable alternative" to be considered in the EIS because: 1. It was not one of the several sites considered in Applicant's secret siting study and presumably does not meet the Applicant's criteria.

2. Applicant neither owns nor has a purchase option on the site (see 6 NYCRR 617.9(b)(5)(v) ('g')).

3. The proposed use is inconsistent with the Village of New Hartford's zoning ordinance.

4. Conversion to tax-exempt status would likely create unacceptable and destabilizing financial consequences to the Village.

5. Forcing the existing businesses to move will likely result in permanent closures, unacceptable job losses, potential blight elsewhere in the Village, and sprawl.

D. The Utica Psychiatric Center is appropriately considered as a reasonable alternate site because it is located within the County's "largest population center," was included in Applicant's secret siting study, and, thus, presumably meets the Applicant's base criteria. This site needs to be weighed against the proposed Downtown and St. Luke's sites as to environmental impacts (both those identified above and, perhaps, others) and a determination made as to which site minimizes adverse impacts to the maximum extent. In discussing this site, the EIS needs to elaborate on or note the following:

1. Applicant lacks ownership or a purchase option to the site (see 6 NYCRR 617.9(b)(5)(v) ('g')).

2. The proposed use of the site would be consistent with zoning, applicable local plans, the street grid, and prior site history (involving hundreds of patients and staff on site at any particular time). There would be no adverse change to community character. Bringing back a healthcare related use to the site could

reverse the neighborhood decline that followed abandonment of Psych Center buildings.

3. Operational impacts to the environment could be expected to

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be similar to those of the past but without an actual study and comparison of what needs to be constructed to what is now there, their significance is unclear.

4. Construction impacts to the environment and sensitive receptors off site could be buffered by both the larger site (several times the size of the Downtown site), and by less intense land uses in the surrounding neighborhood than what is Downtown. Fewer buildings to raze on this site also suggest fewer impacts than at the proposed Downtown site.

5. This site presents fewer opportunities to minimize impacts through the reuse of ancillary facilities than is possible on the St. Luke's Campus.

6. The larger campus suggests that the need for a parking garage could be replaced with surface parking.

7. Since the land is already tax-exempt institutional and existing uses would not have to be dislocated, all the adverse economic, social, business, jobs, smart growth, sprawl, environmental justice and tax consequences associated with the Downtown site would be avoided.

E. The St. Luke's Hospital Campus is appropriately considered as a reasonable alternate site because it is located not only within, but at the virtual center of the County's "largest population center" making its location convenient to the entire region that will be served by the new facility. As Applicant's acknowledged "back-

up" to the Downtown site (Applicant was not required to choose a back-up), the Applicant cannot now credibly deny that the St. Luke's Campus will meet ALL its needs. This site needs to be weighed against the proposed Downtown and Psych Center sites as to environmental impacts and a determination made as to which site minimizes adverse impacts to the maximum extent. In discussing this site, the EIS needs to elaborate on or note the following:

1. The St. Luke's Campus is the ONLY site under consideration for the proposed project that the Applicant actually owns or controls(see 6 NYCRR 617.9(b)(5)(v)('g')).

2. Per the following Table (taken from the NYS Department of Health's Needs Analysis) if the new facility were to be constructed on the St. Luke's Campus, it would result in a negligible increase of THREE BEDS.

This suggests that the variety and intensity of operational environmental impacts of locating the new facility on the St. Luke's Campus should be virtually identical to those associated with the facility that is there now, i.e., NO new or increased impacts to the environment should be expected at the St. Luke's site. This includes impacts to surface water, groundwater, flooding, air, aesthetic resources, transportation, utilities, energy, noise, odor, human health, and solid waste management.

3. Locating the new hospital facility on the St. Luke's Campus (which is more than double the size of the proposed Downtown MVHS IHC) will minimize the environmental impacts associated with construction because (a) the need to bulldoze an entire neighborhood that is likely to contain asbestos and other contaminants from prior uses is eliminated;(b) the proposed project can and should be scaled back to be essentially a replacement of the existing hospital tower, eliminating the need to duplicate existing ancillary, non-healthcare related

facilities that can be re-used, such as the recently constructed medical office building, new cafeteria, new co-generation plant, helipad, and parking lots; (c) the excessive parking proposed for Downtown can be eliminated;(d) the larger site and less intense land uses in the surrounding neighborhood with much space between nearby buildings and the site will buffer impacts to off-site receptors.

4. New areas of environmental concern would be sensitive receptors on site, and a small federal wetland on site. The sensitive receptors can be dealt with as they were in the past given that the existing hospital tower has undergone several major additions over the years of its existence without interruption in service. The emergent wetland is of minimal environmental significance, has been previously encroached upon by the Applicant for a roadway and parking lot without regulatory problem, could be easily replaced or moved to a more convenient location, or be avoided altogether given the large size of the site.

5. The St. Luke's site is far enough away from the Bakken Crude

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transport route to eliminate all possibility of having to evacuate the facility in the event of a rail accident.

6. The proposed project at the St. Luke's Campus would be fully consistent with Town of New Hartford zoning, plans, and involve no change to community character.

7. Since the St. Luke's Campus is already tax-exempt, institutional, and existing uses would not have to be dislocated, the adverse economic, social, business, jobs, smart growth, sprawl, environmental justice and tax consequences associated with moving services to the Downtown site would be avoided.

8. Placing the new hospital tower on the St. Luke's Campus (a) eliminates the need for the Applicant to establish and maintain an additional medical campus, (b) advances the Grant's purpose to "consolidate multiple licensed health care facilities into an integrated system of care," (c) will maintain the proximity of hospital treatment to the providers in the region's de facto medical district consistent with good patient care.

Section 1.10 Elements of the DEIS

A. The Draft Table of Contents for the Draft EIS will have to be revised to reflect the concerns detailed above.

B. Appendices must include the complete Site Selection Study and an Evacuation Plan.

Section 1.11 Irrelevant or Non-Significant Issues or Impacts

Impacts on Flooding must be eliminated from this list for the reasons detailed above under Section 1.4 C.

Thank you for your attention to these matters.

Very truly yours,
Frank Montecalvo
Via Certified Mail and E-Mail bthomas@cityofutica.com

COPY LIST:

Stephen N. Keblish, Jr., Better Utica Downtown snkjr81@gmail.com

Brett Truett & Jim Brock, No Hospital Downtown btruett@softnoze.com, Brock_Jim@nlgroupmail.com

Karen Corrigan-Rider & Shawn Corrigan, Wilcor International karen@wilcor.net, shawn@wilcor.net

Michael Bosak & Michael Lehman, Landmarks Society of Greater Utica michael_bosak@hotmail.com, mjlehman1@gmail.com

John Byrne, Reclaim New York jbyrne@reclaimnewyork.org

Catherine Lawrence, New Hartford Concerned Citizens for Honest and Open Government concerned@nhconcernedcitizens.com

Hon. Michael Galime, President, Utica Common Council mgalime@cityofutica.com

Hon. Paul Miscione, Supervisor, Town of New Hartford pmiscione@townofnewhartfordny.gov

Hon. Donald Ryan, Mayor, Village of New Hartford villagenh@villageofnewhartford.com

Ms. Judy Drabicki, Director, Region 6 NYS Department of Environmental Conservation 207 Genesee St. Utica, NY 13501

Mr. Udo Ammon, Director, Healthcare Facility Planning, Licensure and Finance Bureau of Architectural & Engineering Facility Planning New York State Department of Health Corning Tower, 18th Floor, Empire State Plaza Albany, NY 12237

Mr. Robert S. Derico, RA, Senior Environmental Manager Office of Environmental Affairs Dormitory Authority of the State of New York 515 Broadway Albany, NY 12207

From:	Brian Thomas
To:	Steve Eckler; kbennett@bsk.com
Cc:	Chris Lawrence
Subject:	FW: Hospital Scoping Response
Date:	Tuesday, June 19, 2018 8:49:36 AM
Attachments:	20180618145653356.pdf

Another MVHS SEQRA scoping comment . . . . .

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
Utica, New York 13502
(315) 792-0181 phone
(315) 797-6607 fax

From: Romano, Michael [mailto:mromano@ocgov.net]
Sent: Monday, June 18, 2018 3:22 PM
To: Brian Thomas <bthomas@cityofutica.com>
Cc: Genovese, James <jgenovese@ocgov.net>
Subject: Hospital Scoping Response

Good afternoon Mr. Thomas,

Please find the attached which includes my remarks on the proposed MVHS hospital project. A hardcopy will is being mailed.

Best regards,
Michael Romano

Michael J. Romano, MA|Director
Oneida County Office for the Aging/Continuing Care
120 Airline Street
Oriskany, New York 13424
P:(315)768-3641
F:(315)768-3658
Email: mromano@ocgov.net

Oneida County
Office for the Aging & Continuing Care

Anthony J. Picente, Jr.
County Executive

Michael J. Romano
Director

120 Airline Street-Suite 201 Oriskany, NY 13424 Phone 315-798-5456 Fax 315-768-3658 E-mail.ofa@ocgov.net

Memorandum

To: Brian Thomas, The Commissioner of Urban & Economic Development

From: Michael J. Romano, Director

Date: June 18, 2018

Re: Hospital Scoping Document Response

Please find the attached my Hospital Scoping Documents Response.

I am available should you have any questions or concerns.

Mohawk Valley Health Systems
Hospital Scoping Document Response
Michael J. Romano, Director
Oneida County Office for the Aging/Continuing Care
June 7, 2018 - 5:00 p.m.
New York State Office Building
207 Genesee Street
Utica, New York

Thank you for the opportunity to speak about the proposed downtown hospital project on behalf of the needs of our regions older residents and those with special needs. I am Michael Romano, Director of Oneida County's Office for the Aging and Continuing Care. I would like to commend the leaders of the Mohawk Valley Health Systems who have the vision and foresight to create a design that intends to consolidate existing resources while eliminating duplication of services with the goal of expanding the breadth and scope of medical services.

I believe that a system designed to incorporate the latest technology to improve access and availability, along with a plan to attract specialists is of the upmost importance to better serve our communities increasing older population. Those known to be at greatest risk for acquiring multiple chronic and acute illnesses require and deserve the most skilled medical care available.

Since we know our area already has a high percentage of older persons as cited by our County demographics with include close to 52,000 persons over the age of (60) countywide, which include over 48,000 living in the cities of Utica and Rome. Demographic projections indicate this population will increase significantly by 2050. If you consider this idea from a regional perspective, the older population age 60 and older (the age group that tends to be the highest utilizers of acute and primary care) are projected to increase by nearly 30,000 by 2040, or from 124,727 to 152,550 over our five county region (Fulton, Montgomery, Otsego, Schoharie, Herkimer, and Oneida Counties).

While planning to accommodate for elders in need of emergency department care, acute care and discharges and into rehabilitation and community care, I urge the planners to not only consider the demographic projections but to consider the national hospitalization rates of older persons. National data indicates that while hospitalization rates of those age 85 and older are significantly higher than those between the ages of 65-85, they are generally up to five times higher than those under the age of 65 (CDC-2015).

Statewide demographics also project those, age 85 and older, will increase by 25% between 2000 to 2025 (NYSOFA). Due to this trend, it is important to approach this with increased focus on the needs of the older population when creating staffing patterns, attracting specialists, planning the overall internal environment, functionality and accessibility designs throughout your new facility.

Our medical community collectively works together to create and implement interventions to improve health indicators for adults of all ages, improve transitions between all levels of care and reduce unnecessary emergency room visits and hospital re-admissions. However, Medicare data still tells us that health events such as congestive heart failure, pneumonia, infections, stroke and fractures are the most common causes for hospital utilization of the older population aged 85 and older. With this in mind, coupled with the demographic projections we know so well, your plans to expand and improve this region's health care delivery is the solution needed to continue to move our community forward, increase the livability for persons of all ages and to serve families now and the years ahead.

From:	Brian Thomas
To:	Steve Eckler; kbennett@bsk.com
Cc:	Chris Lawrence
Subject:	FW: Comments from SEQR public hearing June 7
Date:	Tuesday, June 19, 2018 11:36:19 AM
Attachments:	City of Utica SEQR comments June 2018 signed.pdf

Another MVHS SEQRA scoping comment . . . . .

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
Utica, New York 13502
(315) 792-0181 phone
(315) 797-6607 fax

From: Bogan, Patrice [mailto:pbogan@ocgov.net]
Sent: Tuesday, June 19, 2018 10:24 AM
To: Brian Thomas <bthomas@cityofutica.com>
Cc: Ellis, Phyllis D. <pellis@ocgov.net>; Gilmore, Daniel <dgilmore@ocgov.net>; Genovese, James <jgenovese@ocgov.net>
Subject: Comments from SEQR public hearing June 7

Mr. Thomas,
Please find the attached letter which provides the public comments made by myself and Daniel Gilmore, Environmental Health Director.

Thank you,

Patrice

Patrice A. Bogan, MS, FNP-C
Deputy Public Health Director
Oneida County Health Department
Adirondack Bank Building 5TH FL
185 Genesee Street
Utica, NY 13501
pbogan@ocgov.net
Ph-315-798-5772

ONEIDA COUNTY HEALTH DEPARTMENT

Adirondack Bank Building, 5th Floor, 185 Genesee St., Utica, NY 13501

ANTHONY J. PICENTE, JR.
ONEIDA COUNTY EXECUTIVE

PHYLLIS D. ELLIS, BSN, MS, F.A.C.H.E
DIRECTOR OF HEALTH

ADMINISTRATION

Phone: (315) 798-6400 Fax: (315) 266-6138 Email: publichealth@ocgov.net

June 19, 2018

Brian Thomas
Commissioner of Urban and Economic Development
Utica City Hall
1 Kennedy Plaza
Utica, NY 13502

Dear Mr. Thomas,

Please find the following comments made by myself and Mr. Daniel Gilmore, Environmental Health Director, at the SEQR public hearing held at the State Office Building on Thursday June 7, 2018. Our comments were in support of the downtown MVHS new hospital location.

Daniel Gilmore:

I support the downtown location for the new MVHS Hospital. The proposed downtown location for the new hospital has several positive aspects from an environmental health perspective. First, old, dilapidated, poorly maintained buildings, some of which have old lead based paint (which is a known health hazard) and have been rented as residences will be removed. Second, the removal of the older structures in the area coupled with the new construction will facilitate water system infrastructure improvements and upgrades. Third, once completed safe walkways with green space consistent with the complete streets initiative will be available for pedestrians in this section of downtown Utica.

Patrice Bogan:

With this new hospital location comes the opportunity for new and strengthened relationships with the urban community. The required public health and hospital Community Health Assessment identifies the city of Utica with higher than average numbers of obesity, chronic disease, childhood lead poisoning and addiction, to name a few. Therefore, the downtown location is desired due to the opportunity for this new hospital to enhance health promotion strategies within the city of Utica community, where it will live and where it will serve.

Many factors that contribute to health are outside of the health care system. The social determinants of health, healthy aging, progress in addressing racial and ethnic disparities and socio-economic status all influence health status. The NYS Prevention Agenda recognizes the critical role of health care providers in health improvement, with emphasis on actions at the community and environmental level to achieve Prevention Agenda objectives with a goal of improved health status of New Yorkers. Within the healthcare setting, strategies that increase access to care and foster more meaningful engagement with those getting care will support the goal of improved health and reduction of disparities through increased emphasis on prevention. This development will provide growth and improvement of a healthcare system for a rapidly aging population. The downtown location will provide an easily accessed site for people in need. The combined services from existing locations to this single point will also increase operational efficiencies, decreasing the rate of healthcare spending.

Please contact me should you have any questions.

Sincerely,

Patrice A. Bogan
Deputy Director of Health

CC: James Genovese
Phyllis D. Ellis
Daniel Gilmore

From: Brian Thomas
To: Steve Eckler; kbennett@bsk.com
Cc: Chris Lawrence
Subject: FW: scoring/seqr
Date: Tuesday, June 19, 2018 2:29:19 PM
Attachments: Scanned from a Xerox Multifunction Printer.pdf

Another MHVS SEQRA scoping comment (two, actually) . . . . .

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
Utica, New York 13502
(315) 792-0181 phone
(315) 797-6607 fax

-----Original Message-----
From: Karen Corrigan-Rider [mailto:karen@wilcor.net]
Sent: Tuesday, June 19, 2018 1:53 PM
To: Brian Thomas <bthomas@cityofutica.com>
Cc: Mayor <Mayor@cityofutica.com>
Subject: scoring/seqr

Mr. Thomas:

I dropped the June 19 letter to your office today, and the other document here is the one Shawn and I read at the meeting June 6.

Please share these with the board (lead agency) in the process of reviewing the downtown hospital VS the Saint Luke's or other area for the hospital.

Respectfully,
Karen Corrigan
Wilcor International

[COMMENTS OF KAREN CORRIGAN-RIDER TO CITY OF UTICA PLANNING BOARD RE: DRAFT SCOPE FOR MVHS PROJECT 6/6/18]

I. Good evening my name is Karen Corrigan-Rider and I'm here tonight on behalf of The Claris, LLC, which owns the property at 333 Lafayette Street, and Wilcor International which has its annual product show and displays at 333 Lafayette.
   A. Our property and a substantial portion of our business is in the footprint, and if the project were to be approved, we and many of our employees, several of whom live in the City of Utica, would be displaced if we're to continue our business here in the Mohawk Valley.
   B. We're grateful that the Board is holding this hearing on MVHS' draft scope for the Environmental Impact Statement, and we intend to submit written comments as well.

II. The draft scope by MVHS is a starting point, but it's a mere skeleton of what a proper scope for a project of this scale and magnitude should be.
   A. We understand that the SEQRA process involves some give and take and from this first draft scope it's clear that MVHS expects to take, and the community to give.
   B. This is their first offer and we urge the Board to come back with a more reasonable and realistic scope for a DEIS that will more fully achieve SEQRA's objective of elevating environmental considerations to equal footing with social and economic considerations.
   C. Since this final scope will provide the blueprint for this entire environmental impact review, it's imperative that we get this right at the outset as we all embark on this process together
   D. It will be the Board's determination whether the final scope is adequate, so please give this document and this effort your most careful consideration – this is not to time to skimp.

III. How an applicant will finance a particular project is not typically relevant to a project's purpose and need, therefore we ask that the state grant not be referenced or discussed in the section on purpose and deed as those two parameters need to be independently and clearly established in this record.
   A. Spending money for the sake of spending money is not a legitimate purpose, and need must be based on established and objective criteria.

IV. SEQRA's broad definition of environment includes existing patterns of population concentration, distribution or growth, and existing community or neighborhood character.
   A. This project would affect multiple communities and neighborhoods in Oneida County, not just downtown, and it would bring drastic changes to various neighborhoods and communities around the proposed and existing facilities.
   B. We don't believe the draft scope properly addresses these existing patterns and character, or the significant impacts the project will have on our existing patterns of growth and development in our neighborhoods.
   C. We urge the Board to take the necessary hard look and analyze how the project would affect the neighborhood and community where the project is proposed, including people and businesses such as ours who would be displaced, as well as those around the

existing facilities, including the associated medical service businesses who have made significant investments around the existing facilities.

D. Please don't gloss over these important subjects, please make sure that they're subject to thorough analysis and a robust discussion in the DEIS, and please make very sure that adequate mitigation is imposed for all of these impacts.

V. Similarly, SEQRA requires that all Draft Environmental Impact Statements identify and discuss all reasonably related short term and long-term impacts, cumulative impacts and other associated environmental impacts.

A. Other associated environmental impacts from the Project include the secondary impacts that would result from the displacement of property owners and businesses within the footprint of the Project.

B. We understand economic impacts are not directly within the purview of SEQRA, but to the extent this project would substantially interfere with and alter our existing patterns of population, concentration distribution and growth, and significantly affect several existing neighborhoods and communities, the secondary impacts to displaces property owners and businesses must be thoroughly analyzed and mitigated.

VI. The draft scope will determine the only alternatives will be analyzed and discussed in the DEIS, and if an alternative is not in the scope it's not fair game so it's extremely important that the range of reasonable alternatives in the scope be as broad and comprehensive as the project is large in scale and scope.

A. At the very least, the final scope should include an alternative that would involve upgrading, renovating, and/or retrofitting MVHS' existing facilities to achieve its objective of improving the delivery of patient care.

1. Such an alternative is viable and could likely achieve significant advancements and efficiencies in patient care at substantially less cost than the construction of a new facility.

B. We implore the Board to make sure the range of alternatives specified in the scope is appropriately broad and reasonable, and that it omits unreasonable throwaway alternatives such as the New Hartford Shopping Center.

VII. Please do your own independent and thorough review of the draft scope, rely on your own professionals and independent consultants instead of solely on those working for MVHS, and please err on the side of inclusion instead of exclusion when it comes to finalizing the scope, because if something is not in the scope, it won't be in the DEIS, and any of our later comments on any matters not addressed in the DEIS will be completely ignored.

A. That's why this scoping document is so important, so please get it right.

VIII. Thank you for the opportunity to make these oral comments.

Cathy Mack
6/19/18

June 19, 2018

City of Utica Planning Board
1 Kennedy Plaza
Utica, NY 13502

Attention: Mr. Brian Thomas, Commissioner
City of Utica, Department of Urban & Economic Development

Re: Draft Scoping Document, MVHS Proposed Downtown Hospital

Dear City of Utica Planning Board:

This office represents Wilcor International, Inc. ("Wilcor") and The Claris, LLC ("Claris") in connection with the proposed MVHS Downtown Hospital (the "Project"). This correspondence follows oral comments previously provided to the Utica Planning Board on June 6, 2018 by Karen Corrigan-Rider and Shawn Corrigan concerning the Draft Scoping document for the Project, and to avoid unnecessary duplication, Wilcor and Claris join in the written comments of Frank Montecalvo and this correspondence incorporates Mr. Montecalvo's written comments by reference.

As previously indicated by Ms. Corrigan-Rider and Mr. Corrigan at the June 6 Scoping Meeting, the Claris property and a substantial portion of Wilcor's business is in the Project footprint, and if the project were to be approved, many of Wilcor's employees, several of whom live in the City of Utica, would be displaced if they are to continue their successful business in the Mohawk Valley.

The draft scope by MVHS is a starting point, but it is a mere skeleton of what a proper EIS scope for a project of this scale and magnitude should be. We understand that the SEQRA process involves some give and take, and from this first draft scope MVHS expects to take, and the community to give. This is of course the applicant's first draft, and we urge the Board to propose a more comprehensive, reasonable and realistic Scope for a Draft Environmental Impact Statement ("DEIS") that will more fully achieve SEQRA's objective of elevating environmental considerations to equal footing with social and economic considerations. Since the final Scope will provide the blueprint for this entire environmental impact review, it is imperative that the

Planning Board assemble and compose a proper Scope that will be sufficiently protective of the environment. It will be the Board's determination whether the final Scope is adequate, so please give this Scoping document and this effort your most careful consideration, and please do not rely entirely on the applicant's draft Scope.

We would also like to reiterate for the record that how an applicant will finance a particular project economically is not within SEQRA's purview and is not typically relevant to a project's purpose and need, therefore we ask that the state grant not be referenced or discussed in the section on purpose and deed as those two parameters need to be independently and clearly established in this record. Spending money for the sake of spending money is not a legitimate purpose, and a project's need must be based on established and objective criteria.

SEQRA's broad definition of "environment" at 6 NYCRR Section 617.2 includes existing patterns of population concentration, distribution or growth, and existing community or neighborhood character. This Project would affect multiple communities and neighborhoods in Oneida County, not just downtown, and it would bring drastic changes to various neighborhoods and communities around the proposed *and existing* facilities. We don't believe the draft Scope properly addresses these existing patterns and character, or the significant impacts the Project would have on our existing patterns of growth and development in our neighborhoods. We urge the Board to take the necessary "hard look" demanded by SEQRA and analyze how the Project would affect the neighborhood and community where the Project is proposed, including people and businesses such as Wilcor who would be displaced, as well as those around the existing facilities, including the associated medical service businesses who have made significant investments around the existing facilities. Please don't gloss over these important subjects, please make sure that they're subject to thorough analysis and a robust discussion in the DEIS, and please make very sure that adequate mitigation is imposed for all of these impacts.

Similarly, SEQRA requires that all Draft Environmental Impact Statements identify and discuss all reasonably related short term and long-term impacts, cumulative impacts and other associated environmental impacts. Other associated environmental impacts from the Project include the secondary impacts that would result from the displacement of property owners and businesses within the footprint of the Project. While strictly economic impacts are not directly within the purview of SEQRA, to the extent this project would substantially interfere with and alter the city's and the county's existing patterns of population, concentration distribution and growth, and significantly affect several existing neighborhoods and communities, these secondary impacts to displaced property owners and businesses must be thoroughly analyzed and mitigated.

The draft Scope will determine the only alternatives to be analyzed and discussed in the DEIS, and if an alternative is not in the final Scope it won't be considered at any time in the future so it's extremely important that the reasonable range of reasonable alternatives in the final Scope be as broad and comprehensive as the Project is large in scale and scope. At the very least, the final scope should include an alternative that would involve upgrading, renovating, and/or

retrofitting MVHS' existing facilities to achieve its objective of improving the delivery of patient care. Such an alternative is viable and could likely achieve significant advancements and efficiencies in patient care at substantially less cost than the construction of a new facility. We implore the Planning Board to make sure the range of alternatives specified in the final Scope is appropriately broad and reasonable, and that it omits unreasonable "throwaway" alternatives such as the New Hartford Shopping Center.

We expect the Planning Board to do its own independent and thorough review of the draft Scope, to rely on your own professionals and independent consultants instead of solely on those working for MVHS, and to err on the side of inclusion instead of exclusion when it comes to finalizing the Scope, because if something is not in the Scope, it won't be in the DEIS, and any of our later comments on any matters not addressed in the DEIS will be completely ignored. That's why this Scoping process and document is so critically important.

Please make these written comments on behalf of Wilcor and Claris part of the official SEQRA record for this Project. Thank you for the opportunity to comment.

Very truly yours,

Douglas H. Zamelis

From:	Brian Thomas
To:	Steve Eckler; kbennett@bsk.com
Cc:	Chris Lawrence
Subject:	FW: Comments of Wilcor International, Inc. and The Claris, LLC to Draft Scope for Proposed MVHS Downtown Hospital
Date:	Wednesday, June 20, 2018 3:07:03 PM
Attachments:	Correspondence to CUPB re MVHS Draft Scope 6 19 18.pdf

Another MVHS SEQRA scoping comment . . . . .

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
Utica, New York 13502
(315) 792-0181 phone
(315) 797-6607 fax

From: Douglas H. Zamelis, Esq. [mailto:dzamelis@windstream.net]
Sent: Wednesday, June 20, 2018 11:37 AM
To: Brian Thomas <bthomas@cityofutica.com>
Cc: 'Karen Corrigan-Rider' <karen@wilcor.net>; frankmontecalvo@roadrunner.com
Subject: Comments of Wilcor International, Inc. and The Claris, LLC to Draft Scope for Proposed MVHS Downtown Hospital

Dear Mr. Thomas,

Please make the attached comments part of the Planning Board's official SEQRA record for the proposed MVHS Downtown Hospital.

Thank you for your courtesy and assistance.

Doug

Douglas H. Zamelis, Esq.
The Law Office Of Douglas H. Zamelis
7629A State Highway 80
Cooperstown, New York 13326
Tel: (315) 858-6002
Fax: (315) 858-7111

THE LAW OFFICE OF
DOUGLAS H. ZAMELIS

June 19, 2018

VIA EMAIL [bthomas@cityofutica.com]

City of Utica Planning Board
Attention: Mr. Brian Thomas, Commissioner, City of Utica, Department of Urban & Economic Development
1 Kennedy Plaza
Utica, NY 13502

Re: Draft Scoping Document, MVHS Proposed Downtown Hospital

Dear Chairman Matrulli and Members of the City of Utica Planning Board:

This office represents Wilcor International, Inc. ("Wilcor") and The Claris, LLC ("Claris") in connection with the proposed MVHS Downtown Hospital (the "Project"). This correspondence follows oral comments previously provided to the Utica Planning Board on June 6, 2018 by Karen Corrigan-Rider and Sean Corrigan concerning the Draft Scoping document for the Project, and to avoid unnecessary duplication, Wilcor and Claris join in the written comments of Frank Montecalvo and this correspondence incorporates Judge Montecalvo's written comments by reference.

As previously indicated by Ms. Corrigan-Rider and Mr. Corrigan at the June 6 Scoping Meeting, the Claris property and a substantial portion of Wilcor's business is in the Project footprint, and if the project were to be approved, many of Wilcor's employees, several of whom live in the City of Utica, would be forced to alter their commute if Wilcor is to continue its successful business in the Mohawk Valley.

The draft scope by MVHS is a starting point, but it is a mere skeleton of what a proper EIS scope for a project of this scale and magnitude should be. We understand that the SEQRA process involves some give and take, and from this first draft scope MVHS expects to take, and the community to give. This is of course the applicant's first draft, and we urge the Board to propose a more comprehensive, reasonable and realistic Scope for a Draft Environmental Impact Statement ("DEIS") that will more fully achieve SEQRA's objective of elevating environmental considerations to equal footing with social and economic considerations. Since the final Scope

7629A State Highway 80 • Cooperstown, New York 13326
• 315.858.6002 • dzamelis@windstream.net •

will provide the blueprint for this entire environmental impact review, it is imperative that the Planning Board assemble and compose a proper Scope that will be sufficiently protective of the environment. It will be the Board's determination whether the final Scope is adequate, so please give this Scoping document and this effort your most careful consideration, and please do not rely entirely on the applicant's draft Scope.

We would also like to reiterate for the record that how an applicant will finance a particular project economically is not within SEQRA's purview and is not typically relevant to a project's purpose and need, therefore we ask that the state grant not be referenced or discussed in the section on purpose and deed as those two parameters need to be independently and clearly established in this record. Spending money for the sake of spending money is not a legitimate purpose in and of itself, and a project's need must be based on established and objective criteria.

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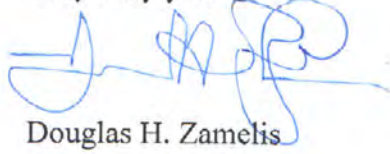
the final scope should include an alternative that would involve upgrading, renovating, and/or retrofitting MVHS' existing facilities to achieve its objective of improving the delivery of patient care. Such an alternative is viable and could likely achieve significant advancements and efficiencies in patient care at substantially less cost than the construction of a new facility. We implore the Planning Board to make sure the range of alternatives specified in the final Scope is appropriately broad and reasonable, and that it omits unreasonable "throwaway" alternatives such as the New Hartford Shopping Center.

We expect the Planning Board to do its own independent and thorough review of the draft Scope, to rely on your own professionals and independent consultants instead of solely on those working for MVHS, and to err on the side of inclusion instead of exclusion when it comes to finalizing the Scope, because if something is not in the Scope, it won't be in the DEIS, and any of our later comments on any matters not addressed in the DEIS will be completely ignored. That's why this Scoping process and document is so critically important.

Please make these written comments on behalf of Wilcor and Claris part of the official SEQRA record for this Project. Thank you for the opportunity to comment.

Very truly yours,



Douglas H. Zamelis

cc:
Wilcor International, Inc.
Att: Karen Corrigan-Rider
The Claris, LLC
Att: Shawn Corrigan

From:	Brian Thomas
To:	Steve Eckler; kbennett@bsk.com
Cc:	Chris Lawrence
Subject:	FW: MV EDGE Letter - MVHS SEQRA Scoping Document
Date:	Tuesday, June 19, 2018 11:38:39 AM
Attachments:	MV EDGE Letter - MVHS SEQRA Scoping Process 06-19-18.pdf

Another MVHS SEQRA scoping comment . . . .

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
Utica, New York 13502
(315) 792-0181 phone
(315) 797-6607 fax

From: Steven J. Dimeo [mailto:sjdimeo@mvedge.org]
Sent: Tuesday, June 19, 2018 10:05 AM
To: Brian Thomas <bthomas@cityofutica.com>
Cc: 'Jennifer Waters' <jwaters@mvedge.org>
Subject: MV EDGE Letter - MVHS SEQRA Scoping Document

Brian

Attached is a copy of the letter from Mohawk Valley EDGE on its comments relative to the MVHS project in downtown and the scoping document that has been developed for the DEIS that will be prepared. A hard copy of the letter is being mailed.

Regards,

Steven J. DiMeo
President
Mohawk Valley EDGE
584 Phoenix Dr.
Rome, NY 13441
(315) 338-0393
(315) 796-1995 cell

MOHAWK VALLEY EDGE

ECONOMIC DEVELOPMENT GROWTH ENTERPRISES CORPORATION
584 Phoenix Drive • Rome, New York 13441
315-338-0393 • 800-765-4990 • FAX 315-338-5694
E-Mail: info@mvedge.org • www.mvedge.org

June 19, 2018
Mr. Brian Thomas
Commissioner
Department of Urban & Economic Development and
City of Utica Planning Board
One Kennedy Plaza
Utica, NY 13502

RE: Mohawk Valley Health System ("MVHS") Integrated Health Campus, State Environmental Quality Review Act ("SEQRA") Draft Scoping Document

Dear Brian:

As the region's principal economic development organization, the EDGE Board of Directors on June 27, 2017 voted to endorse the proposal by MVHS to locate its new Integrated Health Campus on a 25-acre site in downtown Utica. The EDGE Board cited in its resolution that the proposal will vastly improve the delivery of healthcare services for area residents while simultaneously fostering the revitalization of downtown Utica and contributing to the region's economic transformation.

To date, MVHS has completed major milestones necessary for n this project, which includes:

- Securing approval of the $300 million grant from the NYS Department of Health;
- Receiving approval of its Certificate of Need (CON) Application through the NYS Department of Health;
- Advancing design on the proposed 672,000 Square Foot modern state-of-the-art healthcare facility with the goal of commencing construction by end of Q1 2019;
- Negotiating real estate options with affected property owners including the properties owned by the Utica Urban Renewal Agency. To date, more than 40% of the properties are under contract and MVHS is in active negotiations with several private properties;
- Executed a Memorandum of Agreement with the County of Oneida, and City of Utica for planned development of a 1,550 vehicle parking garage under a public-private partnership that will support both MVHS parking and downtown Utica parking needs; and
- Forged strategic partnerships with Masonic Medical Research Institute on incorporating medical laboratory space within the new MVHS integrated healthcare campus and expanding medical education opportunities in conjunction with SUNY Upstate Medical University

All of these milestones are integral steps necessary to move forward with this historic opportunity to build a modern hospital facility that will serve the region's long-term healthcare needs and also facilitate the redevelopment of a portion of downtown Utica. The proposed downtown site is centrally located with excellent road access with the newly completed Arterial project and improvements to Oriskany Blvd that are underway.

The proposed downtown site contains a number of properties that are vacant, underutilized and this section represents an area in need of economic revitalization that will complement improvements made at the Adirondack Bank Center, the newly renovated Doubletree Hotel and refurbished Delta Hotels by Marriott. The construction of a new state-of-the-art healthcare complex in downtown will help stimulate

reuse and re-purposing of pivotal buildings in Baggs Square, and downtown that are ripe for redevelopment but need an economic driver that will enable these properties to be redeveloped

One of the key requirements necessary for this project is satisfying requirements under the State Environmental Quality Review Act (SEQRA). The purpose of this letter is to comment on the proposed Scoping Document that serves as the basis for the Draft Environmental Impact Statement (DEIS) for the Integrated Health Campus project that is being proposed by MVHS and will address specific environmental impacts identified . .

Either directly, or in its capacity as providing staff support to other economic development organizations, EDGE has been involved in several ongoing major master plan developments. This includes the redevelopment of the former Griffiss Air Force Base into what is now Griffiss Business and Technology Park in the City of Rome; and the planned development of the advanced electronics site, commonly referred to as Marcy Nanocenter that is being proposed on a 434-acre site at SUNY Polytechnic Institute's campus in Marcy.

In both of these projects, a scoping document was prepared to identify and assess potential environmental impacts with the planned redevelopment of a 3,500-acre former Air Force Installation that was slated for realignment as a result of the base closure process; and a 434-acre site that is a strategic statewide asset being positioned to expand New York's advanced electronics ecosystem. The final scoping documents for those strategic sites then framed the preparation of a DEIS and was publicly available for review and comment to the public, interested parties and involved agencies before findings could be made on the proposed project.

The proposed scoping document developed for the MVHS project is comprehensive and provides for a thorough and rigorous review of potential environmental impacts that will be addressed in the DEIS. Many of the potential impacts identified have been vetted through the extensive outreach that MVHS has conducted on this project, including questions on alternative site options that were considered for the new hospital.

We believe that the proposed scoping document will provide a basis for evaluating all key environmental impacts for this priority project and will address many of the questions raised relative to this regional project and the proposed downtown location. We look forward to reviewing the final draft EIS once it is prepared.

Sincerely,

Steven J. DiMeo
President

CC: Scott Perra, CEO MVHS
Anthony Picente, Oneida County Executive
Robert Palmieri, Mayor City of Utica
Mohawk Valley EDGE Board of Directors

From:	Brian Thomas
To:	Steve Eckler; kbennett@bsk.com
Cc:	Chris Lawrence
Subject:	FW:
Date:	Tuesday, June 19, 2018 4:28:51 PM
Attachments:	draft comments.docx

Another MVHS SEQRA scoping comment . . . .

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
Utica, New York 13502
(315) 792-0181 phone
(315) 797-6607 fax

From: Davis, Dennis [mailto:DDavis@ocgov.net]
Sent: Tuesday, June 19, 2018 4:08 PM
To: Brian Thomas <bthomas@cityofutica.com>
Cc: Genovese, James <jgenovese@ocgov.net>
Subject:

Commissioner Thomas,
I have attached my comments in regard to the environmental impact scoping. I briefly paraphrased these comments at the public hearing.
Dennis S. Davis
Commissioner
Department of Public Works
Oneida County

My name is Dennis Davis, I am the commissioner of the Department of Public Works for the County of Oneida. My comments will be brief in regards to environmental impacts and I am in support of this project. I have been involved in many heavy construction projects in the 38 + years that I have worked in this department.

Construction projects of this scope can have many environmental concerns especially in regards to storm water management. They also provide an opportunity to make dramatic improvements to current conditions resulting in long-term benefits that otherwise would be difficult to attain.

Separation of storm water and sanitary discharge will be a continued focus for this community for years to come. Storm water management has many new technics and devices that will be available for consideration in the design for this project and should provide for potential improvements.

From: Brian Thomas
To: Steve Eckler; kbennett@bsk.com
Cc: Chris Lawrence
Subject: FW: Comments to add to Public Scoping for proposed downtown hospital
Date: Wednesday, June 20, 2018 5:14:58 PM

Another MVHS SEQRA scoping comment . . . . .

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
Utica, New York 13502
(315) 792-0181 phone
(315) 797-6607 fax

-----Original Message-----
From: Donna Beckett [mailto:beckhop69@yahoo.com]
Sent: Wednesday, June 20, 2018 4:46 PM
To: Brian Thomas <bthomas@cityofutica.com>
Subject: Comments to add to Public Scoping for proposed downtown hospital

Attn: Mr Colon --- Mr Priore --- Mr Caruso --- Mr Mitchell --- Mr Matrulli --- Mr Thomas

Please place the following into Public Comments --- SEQRA --My name is Donna Beckett -- I spoke at the Public Session held at NYS Office Bldg on Thurs June 7, 2018. I want to be sure you read the following -- in addition to my recorded comments that evening. 1) the Paid Employee Department Heads of Oneida Co were there and did not provide any documentations to their points, it was all opinion of their job positions that they hold. They are employed by Anthony Picente. 2) John Swann is the paid employee spokesperson for Newmvhospital--downtown ---and again required to promote a downtown site by his employer - the Community Foundation. The man from Genesis (paid or not) same....and again both only speaking 'support' and no verification of why. Regardless of being private citizens, their personal & employment agenda should not be much considered.....you all know the audience, after a few DH took turns speaking, gave a quiet chuckle or sigh.....they knew why those 'appeared'. 2) Bob Heins -architect -spoke against the DT site and he speaks with a great deal of experience, review of this plan, and involvement with the politicians and hospital. As a matter of fact (you can contact verify and call him for his first person account) he was, in the early days of this proposal, for DT site, on the yes side...……he's now opposed…….he no longer is for it. He is the architect who worked with Bank of Utica and their recent tower. He stated he was one of the original members, many years ago, on the NYS committee to design the SEQRA regulation/requirement document and process....pay close attention to his verbal speaking points made that night. 3) I expect (and remembering Mr Colon's surprised?alarmed? facial expression) when you will do the 'work load of researching', as stated by Mr Keblish, this huge responsibility task it requires AND NOT RELY AT ALL on political operatives or 'others' who talk the good spin...……...I have looked at both sides - and heard all taxpayers, residents, local urban planners, hosp and local architects, medical staff of drs, nurses, support staff AND let's not forget Red Zone, it is a real danger regardless of 'evacuation procedures'...(BTW --I'm the person who brought the question up 'do you know --to Robert Scholefield at West Utica Neighborhood Meeting April 2017 as a result of speaking to a local volunteer firefighter who is employed by one of those affected business in Columbia/Lafayette) and Scholefield had just found out, a month before, of that concern from ----of all people (not Utica/County/planners/hosp engineers/architects at 18mos into plans) but the young adult child (a hospital employee) of that firefighter who told me during my (remember?) survey time in the NEIGHBORHOOD...….there is a less costly (money, livelihood, history, street grid, taxes taxes taxes) ALTERNATE site -- St Luke's Campus with incinerator (oh, DT hospital will truck red bag waste thru streets to incinerator at St. Lukes----hope they don't bump into ambulance carrying Nursing Home resident from St Lukes Home to/from DT hospital- - Nursing Home

must remain at St Lukes Check with New York State Dept of Health and CON and Dormitory Auth the Gov Office as to private taxpaying residents have written complaining of proposed DT site.

From:	Brian Thomas
To:	Steve Eckler; kbennett@bsk.com
Cc:	Chris Lawrence
Subject:	FW: Comments for the Planning Board Consideration
Date:	Wednesday, June 20, 2018 3:00:35 PM
Attachments:	SEQRA response, Planning Board, signed.pdf

Another MVHS SEQRA scoping comment . . . . .

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
Utica, New York 13502
(315) 792-0181 phone
(315) 797-6607 fax

From: Michael Bosak [mailto:michael_bosak@hotmail.com]
Sent: Wednesday, June 20, 2018 2:45 PM
To: Brian Thomas <bthomas@cityofutica.com>
Subject: Comments for the Planning Board Consideration

re: Draft Scoping Document, MVHS Proposed Downtown Hospital

Please include with the comments for this item, thank you.

Michael Bosak

Michael J. Bosak
18 Avery Place
Utica, NY 13502
315.254.1080 (cell)
michael_bosak@hotmail.com

June 20, 2018

City of Utica Planning Board
1 Kennedy Plaza
Utica, NY 13502
Attention: Mr. Brian Thomas, Commissioner
City of Utica, Department of Urban & Economic Development

Ref: Draft Scoping Document, MVHS Proposed Downtown Hospital

Dear Members of the Utica Planning Board:

The following items must be considered and addressed as part of the SEQRA process in the Draft Scoping Document for the MVHS Proposed Downtown Hospital.

Section 1.4 -- Potentially Significant Adverse Environmental Impacts:

- **Ability to complete the project.** The speculative nature of the costs estimates for this project are woefully inadequate given the rapidly rising prices of materials (such as steel and aluminum) and the ultimate cost to ac
- **The new, City of Utica-initiated Historic District:** There are at least two significant buildings (301 and 401 Columbia Street) that are proposed to be demolished that are located within the new Utica Historic District that has been approved by the NY State historic Preservation Office (NYSHPO).
- **Numerous buildings that are eligible for inclusion on the State and National Registers of Historic Places that will be lost if the project proceeds as planned:** There are at least four significant properties that are eligible for inclusion on the State/National Registers of Historic Places that would be demolished if this project proceeds as planned.
- **Complete and total disregard for the City of Utica Master Plan:** The adopted Utica Master Plan calls for low-rise, mixed use development that incorporates existing structures.
- **Complete and total disregard for the City of Utica Erie Canal Gateway District:** The adopted Utica Gateway District Plan calls for low-rise, mixed use development that incorporates existing structures.

- **The need to release the Site Selection Study:** To underscore the non-transparent and flawed nature of this entire process, the often referred-to Site Selection Study has not been released for public scrutiny.
- **The proposed hospital will be located within the ½ mile evacuation zone of the CSX railroad mainline:** The US Department of Transportation maintains a critical evacuation zone one half mile on either side of mainline railroad tracks where trains transporting Bakken oil and/or other hazardous chemicals routinely travel. The proposed hospital footprint is squarely within this potential evacuation zone.

The impact on the neighborhood, including, but not limited to, the existing, tax-paying businesses, will be devastating.

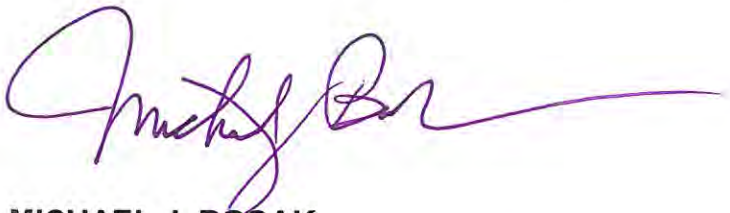
The impact on the taxpayers of both the City of Utica and of Oneida County, will be devastating.

The nature of healthcare in general is changing rapidly and dramatically; what is considered "state of the art" by today's standard will likely be obsolete by the time that this facility is finally constructed. Furthermore, the perpetuation of many new, stand-alone outpatient clinics in the area tend to preclude the need for a more traditional-style hospital.

No plan has been put forward as to the ultimate fate of the remaining campuses (St. Luke's, Faxton, and St. Elizabeth's).

In conclusion, the proposal to place a new hospital in downtown Utica has far more environmental impacts than benefits when considering the alternative of the existing St. Luke's campus.

Thank you for your attention to this matter.



MICHAEL J. BOSAK

ARCHITECT/URBAN PLANNER

From:	Brian Thomas
To:	Steve Eckler; kbennett@bsk.com
Cc:	Chris Lawrence
Subject:	FW: Utica Planning Board – SCOPING Process - June 20, 2018
Date:	Wednesday, June 20, 2018 5:16:33 PM
Attachments:	utica planningboard.doc 710 pageemail.pdf

Another MVHS SEQRA scoping comment . . . . .

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
Utica, New York 13502
(315) 792-0181 phone
(315) 797-6607 fax

From: citationgraphics@aol.com [mailto:citationgraphics@aol.com]
Sent: Wednesday, June 20, 2018 4:50 PM
To: Brian Thomas <bthomas@cityofutica.com>
Cc: news@uticaod.com; Perritano@aol.com; fperrita@uticaod.com; Dudajek@aol.com; ddudajek@uticaod.com; Johns@aol.com; rjohns@uticaod.com; news@wibx950.com; jeff.monaski@townsquaremedia.com; jeff@wibx950.com; billkeeler1@me.com; jimr@wibx950.com; WIBX@aol.com; Andrew.Derminio@townsquaremedia.com; gliberatore@wktv.com; newslink2@wktv.com; DShipman@wktv.com; smcmurray@wktv.com; Talk@wutqfm.com; Aiello@aol.com; Jason@rosergroup.com; Aiello@aol.com; Jason@wutqfm.com; news@wutr.tv; frankvescera@gmail.com; Brian Thomas <bthomas@cityofutica.com>; Citationgraphics@aol.com; btruett@softnoze.com
Subject: Utica Planning Board – SCOPING Process - June 20, 2018

Citation Services
Joseph Cerini
418-430 Lafayette St
Utica, NY 13502
telephone 315-797-2319
Citationgraphics@aol.com

mail PO Box 4205
Utica, NY 13504

June,20, 2018

Utica Planning Board – SCOPING Process - June 20, 2018

bthomas@cityofutica.com

City of Utica Planning Board
1 Kennedy Plaza

Utica, NY, 13502

Attention: Mr. Brian Thomas, Commissioner

City of Utica, Department of Urban & Economic Development

Ref: Draft Scoping Document, MVHS Proposed Downtown Hospital

Dear City of Utica Planning Board:

This letter is in response to the Utica Planning Board's request for public comment.

I see the entire decision for downtown was made before any consideration of environmental impact called for public input in the legislation. I'd like to enter all 710 pages of emails into today's records (incorporation by reference) that clearly show that public input was not sought. The downtown site was a predetermined decision by Anthony Brindisi, Anthony Picenti, Larry Gilroy and Steve DiMeo pushed on MVHS.

In 2015 downtown references such as "guide siting(citing) decision in favor of downtown", "push for downtown", "downtown site preferable", "preference of downtown site", "downtown site has political support", " case for a downtown site", "hope they are seriously considering downtown as their primary location" all before called for public input circumvented the proper process. The "legislation called for" public meetings also failed to include advertised public meetings in Madison and Herkimer counties.

Thank You

Joseph Cerini

710 PAGE FOILED EMAIL ATTACHMENT

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mail PO Box 4205
Utica, NY 13504

June,20, 2018

Utica Planning Board – SCOPING Process - June 20, 2018

bthomas@cityofutica.com

City of Utica Planning Board
1 Kennedy Plaza
Utica, NY, 13502
Attention: Mr. Brian Thomas, Commissioner
City of Utica, Department of Urban & Economic Development

Ref: Draft Scoping Document, MVHS Proposed Downtown Hospital

Dear City of Utica Planning Board:

This letter is in response to the Utica Planning Board's request for public comment.

I see the entire decision for downtown was made before any consideration of environmental impact called for public input in the legislation. I'd like to enter all 710 pages of emails into today's records (incorporation by reference) that clearly show that public input was not sought. The downtown site was a predetermined decision by Anthony Brindisi, Anthony Picenti, Larry Gilroy and Steve DiMeo pushed on MVHS.

In 2015 downtown references such as "guide siting(citing) decision in favor of downtown", "push for downtown", "downtown site preferable", "preference of downtown site", "downtown site has political support", " case for a downtown site", "hope they are seriously considering downtown as their primary location" all before called for public input circumvented the proper process. The "legislation called for" public meetings also failed to include advertised public meetings in Madison and Herkimer counties.

Thank You

Joseph Cerini
710 PAGE FOILED EMAIL ATTACHMENT

From:	Brian Thomas
To:	Steve Eckler; kbennett@bsk.com
Cc:	Chris Lawrence
Subject:	FW: Scoping Document Public Comment
Date:	Wednesday, June 20, 2018 3:03:35 PM
Attachments:	PicentePublicWrittenCommentScoping6.20.18.docx

Another MVHS SEQRA scoping comment . . . .

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
Utica, New York 13502
(315) 792-0181 phone
(315) 797-6607 fax

From: Genovese, James [mailto:jgenovese@ocgov.net]
Sent: Wednesday, June 20, 2018 2:47 PM
To: Brian Thomas <bthomas@cityofutica.com>
Subject: Scoping Document Public Comment

Brian,

Attached are the public comments from County Executive Picente to be included in the scoping public hearing comment period.

Thank you,

James Genovese
Oneida County Executive's Office
315-798-5800

ONEIDA COUNTY
OFFICE OF THE COUNTY EXECUTIVE

ANTHONY J. PICENTE, JR.
County Executive
ce@ocgov.net

I am Oneida County Executive Anthony J. Picente Jr. and these are my written comments related to the June 7, 2018 public scoping hearing pursuant to the New York State Environmental Quality Review Act with respect to the Integrated Health Campus Project proposed by Mohawk Valley Health System. The submission of these comments was required by June 20, 2018.

A new integrated health campus in downtown Utica is a key component to the future of this region. It means state-of-the-art healthcare for the next generation of patients, as well as a state-of-the-art facility to assist in the recruitment of the next generation of doctors. This project has already shown the ways in which our medical community will be improved by this project.

MVHS will be strengthened financially and medically by combining its two outdated 100-year-old facilities and enabling it to provide better healthcare to our community and the region going forward. This project has also resulted in a unique partnership between MVHS and the Masonic Research Lab which will position this new facility as a leader in medical research. Many more opportunities will also be made possible through this crucial endeavor.

I strongly support this project because, first and foremost, it is essential to the future of the health of this community. I also, however, support this project because of the location. Long has the proposed area been blighted, abandoned and in disrepair. Not in my lifetime has that area seen a half a billion dollars in development. In fact, no area in this entire city, county or region has ever seen that type of investment into a single project in a single area.

In one fell swoop a neighborhood ignored for over 50 years will become the focal point of the new Utica. With a new hospital campus comes 3,500 plus employees over three shifts. With a new campus comes new streets, landscapes, walking paths, light and connectivity to the adjacent areas. Upon completion, one of the bleakest areas of Utica will become a brand new beacon of light and energy.

There are currently businesses and non-profits within the proposed district, but the largest land owner is the City of Utica because so many of the buildings are abandoned. In many cases they have been so for decades. I have no reason to believe that the handful of active businesses and non-profits located there cannot stay in either the City of Utica or the County of Oneida. They are an important part of this community and we should help to keep them here.

The scoping document is an essential piece to the SEQRA review and I'm pleased to see it is professional, thorough and addresses the SEQRA cookbook from beginning to end. This scoping document is about the location of this facility. Through this process, questions about the impact on transportation, flooding, emergency management, historic resources, noise, human health and many others will be addressed fully. County government stands ready to assist with our expertise in any way possible.

This is a once-in-a lifetime opportunity to rebuild this city, and while there are always challenges to a project of this importance and magnitude, together as a community we can overcome them.

Thank you for your time.

Anthony J. Picente Jr.

From:	Brian Thomas
To:	Steve Eckler; kbennett@bsk.com
Cc:	Chris Lawrence
Subject:	FW: City of Utica Planning Board's Draft Scoping Document Comments
Date:	Thursday, June 21, 2018 8:28:36 AM
Attachments:	City of Utica Scoping Document DASNY Comments for MVHS New Hospital to B Thomas.docx

Another MVHS SEQRA scoping comment . . . . presumably the last.

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
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From: Derico, Robert [mailto:RDerico@dasny.org]
Sent: Wednesday, June 20, 2018 5:55 PM
To: Brian Thomas <bthomas@cityofutica.com>
Cc: Richards, Sara <SRichard@dasny.org>
Subject: City of Utica Planning Board's Draft Scoping Document Comments

Mr. Thomas:
Attached is DASNY's response letter to the City of Utica Planning Board's Draft Scoping Document for your files.
DASNY's letter indicates where focused analysis would be beneficial to the project and community.
Please let me know if you have any questions on the attached.
Thank you,
Bob Derico

Robert S. Derico, RA
Senior Environmental Manager | Office of Environmental Affairs

DASNY | We Finance, Build and Deliver.
515 Broadway, Albany, NY, 12207

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www.dasny.org

ANDREW M. CUOMO
Governor

ALFONSO L. CARNEY, JR.
Chair

GERRARD P. BUSHELL, Ph.D
President & CEO

June 19, 2018

City of Utica Planning Board
Attention: Mr. Brian Thomas, A.I.C.P., Commissioner
City of Utica, Department of Urban and Economic Development
1 Kennedy Plaza
Utica, New York 13502

Via First Class Mail and Electronic Mail

Re: The City of Utica Planning Board's *State Environmental Quality Review* Scoping Session Comment Letter for Mohawk Valley Health System's *Construction of the Integrated Health Campus*, City of Utica, Oneida County, New York

Dear Mr. Thomas:

DASNY ("Dormitory Authority State of New York") is in receipt of the City of Utica Planning Board's ("UPB's") Positive Declaration and Notice of Intent to prepare a *Draft Environmental Impact Statement ("DEIS")* as well as the *Draft Scoping Document*. DASNY thanks the UPB, as lead agency, for holding the Scoping Session related to the proposed Mohawk Valley Health System's ("MVHS") *Construction of the Integrated Health Campus ("IHC")*. DASNY encourages public input whenever possible in the State Environmental Quality Review ("SEQR") process and exercise the Scoping Session option for all our projects requiring an *Environmental Impact Statements ("EIS").* DASNY, in conjunction with the New York State Department of Health's ("NYSDOH's") Statewide Health Care Facility Transformation Program ("SHCFTP"), would be funding the construction of the proposed IHC.

DASNY's review of the *Draft Scoping Document* comprehensive listing of *Potentially Significant Adverse Environmental Impacts* illustrates the magnitude of the project. Analysis of the various environmental topics reveal some areas where focused efforts would be beneficial to the project and community. DASNY would stress the need for complete Environmental Site Assessments on all properties included within the project limits of the proposed IHC. The historic uses within this former industrial section of the city may have included substances now known to be health hazards, potentially leaving behind toxic residue.

While the *Potentially Significant Adverse Environmental Impacts* table notes the need for a *"Traffic Impact Study with study limits coordinated with NYSDOT and the City of Utica",* the demapping and closure of a portion of Lafayette Street from Broadway west to State Street, additional study may be required as it relates to the existing below-streetbed infrastructure, and how existing municipal systems remain functional during construction. Additionally, any existing easements in place for private utilities would need to be examined.

The Proposed Project description notes that Faxton St. Luke's Healthcare ("FSLH") and the St. Elizabeth Medical Center ("SEMC") would be consolidated and relocated to form the proposed MVHC IHC. DASNY would note that the proposed environmental review should include an analysis of the future reuse(s) of the FSLH and SEMC campuses, to the extent that they are known, once consolidation of these facilities is accomplished. Additionally, clarification of all currently existing hospital-related functions to remain operational at the FSLH and SEMC facilities after consolidation should be described.

DASNY would also recommend that a complete description of the existing services at the FSHL and SEMC campuses and related environmental impacts should be discussed in the *DEIS'* Project Overview and Existing Conditions section. This would provide a more fulsome description of the current and anticipated environmental impacts in order to establish the appropriate baseline for measuring the potential environmental impacts of the Proposed Project. Additionally, any forseeable future expansions, such as the potential future medical office building, should be addressed in the *DEIS*. If the potential environmental impacts cannot be addressed at this time, please provide the reasoning and if future environmental reviews will be undertaken as the future projects evolve.

DASNY would also like to encourage UPB to undertake a robust analysis of Environmental Justice within the study area of the IHC development site. The analysis should document any potential positive or negative socioeconomic impact due to changes in area income levels or other demographic characteristics.

The Proposed Project should also be vetted for compatibility with any existing City of Utica or Oneida County comprehensive plans. These documents may help conceptualize the development of the IHC and further the revitalization of this area of the City of Utica.

Lastly, the Revised *Environmental Assessment Form – Parts 1, 2, and 3 ("EAF – Parts 1, 2, and 3")*, dated April 4, 2018, lists DASNY as a "Potential Property Condemnation/Eminent Domain" agency. DASNY does not have a role as a condemnor for the taking of property related to the Proposed Project. DASNY's role remains as a joint administrator, along with New York State Department of Health ("NYSDOH"), for the financing of the Proposed Project through grant funding, and that of a potential private bond issuer on behalf of MVHS.

Thank you again for the ability to comment as an involved agency funding the Proposed Project. All additional project related correspondence or documentation should continue to be submitted to me at: ***Mr. Robert S. Derico, R.A., Senior Environmental Manager, Office of Environmental Affairs, Dormitory Authority State of New York, 515 Broadway, Albany, New York 12207-2964*** or via electronic mail at ***rderico@dasny.org*****.**

Respectfully,

Robert S. Derico, R.A.
Senior Environmental Manager

cc: Michael E. Cusack, Esq. (DASNY)
Sara P. Richards, Esq. (DASNY)
Udo Ammon (NYSDOH)
James P. Lupoli (DASNY)
SEQR File
OPRHP File

From:	Brian Thomas
To:	Steve Eckler; kbennett@bsk.com
Cc:	Chris Lawrence
Subject:	FW: SEQRA scoping input MVHS Proposal
Date:	Wednesday, June 20, 2018 5:07:39 PM
Attachments:	MVHSScopingResponseMichaelGalime6202018.pdf

Another MVHS SEQRA scoping comment . . . .

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
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From: Michael P. Galime
Sent: Wednesday, June 20, 2018 3:30 PM
To: Brian Thomas <bthomas@cityofutica.com>; Fred Matrulli <fmatrulli@roadrunner.com>
Subject: SEQRA scoping input MVHS Proposal

Brian, Fred, Planning Board,

Please see that this attached letter is filed, and that the planning board obtains a copy.

Regards,
Michael P. Galime
President, City of Utica Common Council
Phone: 315.792.0113
Cell: 315.525.4224
www.cityofutica.com

Michael P. Galime, Council President -Utica
2617 Crestway Utica, NY 13501
Tel 3155254224
mgalime@cityofutica.com

JUNE 19, 2018

Brian Thomas

Fred Matrulli

CC: Utica Planning Board – Lead Agency, MVHS Scoping

1 Kennedy Plaza Utica, NY 13502

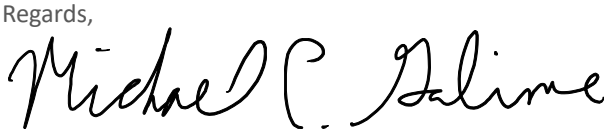
Brian, Fred, Planning Board,

Please see the attached. I have included a list of potential negative impacts that need review and/or further scoping in the pages within this document. Please let this serve as a cover letter for the SEQRA scoping input.

I also am urging the planning board to ensure that this project is treated as a private development project, that has received a government grant for partial funding, and that the project be reviewed in its entirety.

Thank you, and please see the following pages and file it public scoping response for the MVHS SEQRA.

Regards,



Michael Galime

COUNCIL PRESIDENT, CITY OF UTICA

Potential Adverse Impacts, MVHS Hospital Proposal – input for EIS.

New Hartford & South/West Utica Vicinity

Power Plant Cogeneration Facility

What will be the impact of MVHS leaving the cogeneration power plant facility behind? Will the operator continue to run the plant, and how will this effect the power delivery and rates for Utica College?

How will this effect the overall grid for the area?

Medical Office and Outpatient Facility Locations

Many outpatient facilities and medical offices have located and/or been built within the St. Luke's facility. This includes the Omni Surgical Center, as well as many offices within the business park. Will these locations need to relocate, and if so, will this cause unplanned financial burden on the overall medical community?

Cost of Facility Reuse

The St. Luke's Campus is said to be marketable to private development, however, within the Oneida County Local Development Corporation (OCLDC) application, as of February 2018, the entire campus is not being decommissioned. Who will maintain the property to insure it is not depreciating and left to become decrepit post abandonment, or when partially abandoned.

South Utica Genesee St Vicinity

Facility Reuse

Is there a known plan to market and maintain the property at St. Elizabeth's? Allowing this facility to wain while vacant may impact the overall status of upper Genesee St. Who will maintain the property to insure it is not depreciating and left to become decrepit post abandonment, or when partially abandoned?

Medical Office and Outpatient Facility Locations

Many outpatient facilities and medical offices have located within the St. Elizabeth's area. How much of the surrounding area would be left vacant if there is a general push to move all ancillary medical business downtown?

Downtown Utica Vicinity

Unrealized Potential Cost

The current budget for the hospital proposal does not include water, sewer, gas delivery, or overall infrastructure cost. Who will be expected to pay for these additions to the project if there are overruns or unanticipated issues crop up.

Facility Placement Impact

A blanket statement has been made that there is a need to place medical care within reach of people in socio-economically stressed scenarios. The current proposal and scoping document proposes the construction of an acute care facility with surgical and emergency services. Placing a facility of this type

in the urban core of the greater Utica area may create a situation that the care that is most needed by the population discussed as “in need” in the MVHS proposal and state legislation will not be able to receive the clinical and chronic care at the proposed facility.

It is very possible and should be studied that spending 1billion dollars rearranging the region around a single facility of this design is not addressing the actual needs of this community.

This consideration should be studies regardless of the chosen location.

Traffic and Congestion

The City of Utica is becoming more congested as the municipal center grows. There is more potential for access issues in an urban center. In 2017 Route 12 was closed due to accidents and weather events multiple times, causing Genesee St and Route 5 to become gridlocked. The potential impact of locating our proposed single emergency care facility in this situation must be considered.

Heliport

The heliport specified in the filings is not a helipad. Can a helicopter land within this proximity to buildings, on a ground level, safely? How will people be transported into the facility, considering its placement adjacent to the proposed facility.

Impact of Increased Power Grid Use

The new facility is no longer going to produce its own power. There may be an impact to overall rates and delivery. Has this been studied, and it should be included into the overall potential environmental impact.

Financial Impact to City of Utica

The financial impact to the City of Utica is not understood at this point. There are unknown and unspecified costs regarding infrastructure, facility relocations, parking garage costs, and the introduction of a large tax abatement. A long term (5 year, 10 year, and 15 year) outlook should be analyzed and considered. Above and beyond property tax, there will be a loss in property tax, and increase in services that should be studied and considered adverse due to the impact to the City.

All accountable costs, revenue loss, revenue gains, and expenses must be considered.

Financial Impact to City of Utica School District

If the downtown location is chosen, the Utica School District will be losing tax revenue funding.

Financial Impact to County

If the downtown location is chosen, the Oneida County will be losing tax revenue funding.

Financial Impact to City of Utica Library

If the downtown location is chosen, the Utica Library will be losing tax revenue funding.

Impact of loss of Central Business District

The direct cost to the City of Utica in aiding MVHS to build a downtown facility may be greater than the cost to reinvigorate the current tax paying business district through use of the same street scape and façade improvements proven to work on Genesee St and repairing a reutilizing our current parking structures for Hotel and Auditorium needs.

The indirect cost of spending money to reduce the ability to generate tax revenue will spread the direct costs of the MVHS aid from the City and County across the remaining tax paying entities left in the City of Utica, while resulting in a permanent tax abated installation.

Future Expansion: Landlocking

The current proposal calls for a reduced size single location consolidation of our medical delivery system. This is being placed in the center of the City of Utica, landlocking the facility for all future development, while surrounded by privately owned property. This will limit future expansion and should be considered and adverse effect.

Affected Property Owners and Businesses

At this time there have been adverse negative effects imposed on the central business district. MVEdge has stated multiple times that the district could have kept moving forward during the #MVHSDowntown campaign, however, in the case of the new Enterprise Car location, the city, property owners, and Enterprise were all sent correspondence from MVEdge to not develop their property because it will be taken.

This correspondence was prior to the filing of the project with the OCLDC.

Moving forward how will the affected businesses be dealt with. There has not been to date clear discussion based on this. The central business district is home to many tax paying businesses as well as not-for-profit community support businesses. The current filings from the OCLDC are stating that PILOT agreements and possible relocation costs will be dependent on job creation.

The potential negative impact is that these businesses themselves are placed in a position of stagnancy and financial impact that they would have otherwise not had to deal with if this proposal was not floated for multiple years prior to its filing.

Infrastructure Cost

The following are not currently specified within the 480milllion dollars of proposed cost.

- Storm Water Mitigation
- Water Delivery
- Natural Gas Delivery
- Power Delivery

There is a potential negative impact where these costs will fall outside the specified scope, and MVHS will look to the City, County, and State for additional funding.

Regional Land Use and Availability

Empty hospital site issue

The greater Utica area will be left with three empty hospital sites. The state psychiatric facility, St. Elizabeth's, and St. Lukes. Is this scoped proposal the best use of the downtown developable commercial active property, while leaving behind facilities that are currently in use empty, and have no scoped reuse and/or rehabilitation plan.

In exchange for a few empty buildings that have commercial potential downtown we are creating multiple large empty facilities with no current commercial prospects, throughout the region.

Land Availability

Downtown Utica property is becoming a premium. Reducing the available land will increase cost and sellable value, creating a situation where current business and property owners may either not be able to expand in place, or be priced out of their current options. This should be considered part of the scoping of adverse effects.

MVHS Ability to Complete

Financial Plan

At this point the scoping document and proposed project filed with the Oneida County Local Development Corporation does not demonstrate the financial ability to complete the proposed project. There is a potential situation where MVHS may not be able to fund the project fully and may turn to tax payer funding to bail out overruns.

Cost Overrun Planning

The current statement from MVHS CEO Scott Perra, when asked how the project will be dealt with if over budget, was that the project will not go over budget. This is not an adequate answer for a project of any scale.

Overall Facility Impact

The proposed purpose of the facility filed with the OCLDC and scoped within the SEQRA filings is to improve the overall delivery of health care needs in the greater Utica area.

This proposal is consolidating current facilities into one, keeping operational care the same in most areas, and reducing it in others (pediatrics), for example.

Regardless of the chosen location, there is potential negative impact that the proposed facility will not achieve proposed and pitched improvements and not increase our healthcare delivery overall, while at the same time reducing the size of the overall capabilities within the area.

From: Brian Thomas
To: Steve Eckler; kbennett@bsk.com
Cc: Chris Lawrence
Subject: FW: Comments on Draft Scope, MVHS Downtown Hospital
Date: Wednesday, June 20, 2018 5:17:10 PM
Attachments: KeblishScopingComments.pdf

Another MVHS SEQRA scoping comment . . . . .

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
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(315) 797-6607 fax

From: Stephen N. Keblish Jr. [mailto:snkjr81@gmail.com]
Sent: Wednesday, June 20, 2018 4:56 PM
To: Brian Thomas <bthomas@cityofutica.com>
Cc: Michael P. Galime <mgalime@cityofutica.com>; pmiscione@townofnewhartfordny.gov
Subject: Comments on Draft Scope, MVHS Downtown Hospital

Dear Utica Planning Board:

Attached please find my comments for consideration in the Scoping Document on the proposed MVHS Downtown Utica Hospital Project.

Respectfully,
Steve Keblish

Stephen N. Keblish Jr.
106 Genesee Street
Utica, NY 13502

20 June, 2018

City of Utica Planning Board
1 Kennedy Plaza
Utica, NY 13502
Attention: Mr. Brian Thomas, Commissioner
City of Utica, Department of Urban & Economic Development

Ref: Draft Scoping Document, MVHS Proposed Downtown Hospital

To the honorable members of the City of Utica Planning Board:

Please find the attached response to the Utica Planning Board's request for public comment on the above-referenced Draft Scoping document. While the scale and complexity of the project will likely require that the scoping document employ some simplifying principles in its final development, I encourage the planning board to resist abridging the work required to achieve a comprehensive Environmental Impact Statement.

Regards,

Steve Keblish

IMPACT ON LAND

The following items of concern address how people use or relate to the land affected by the proposed project.

1. Land used by the City of Utica:

The City of Utica currently possesses and employs several parcels and streets within the impacted site. These publicly held lands serve interests in the public good, including supporting public safety operations, private and public transportation, commerce, parking, and preserving the historical character of Utica.

The Scoping Document should call for a review of these uses, including plans to mitigate the impacts to:

- the City of Utica's Police Maintenance Facility operations,
- plans to replace to the Police Maintenance Facility,
- the impact on closing streets to transportation and parking (especially on local events including the Boilermaker, Adirondack Bank Center events, and other events which rely on these streets),
- the historical significance of Lafayette Street,
- the historical significance of the street grid (especially as it relates to historical events associated with National Beer Day and a potential Beer Museum planned in Utica),
- the values of properties held by the City of Utica and the ability of the City to recoup the value of those properties (especially as measured against the purpose of acquiring those properties I.E.: collecting or generating property taxes).

Land used by private property owners:

The proposed site includes many private property owners who utilize the land for private commerce, non-profit activities, worship, storage, display, services, and community organizing. These lands generate benefits to the community and public in the form of property taxes, sales taxes, public space, amenities, fellowship, donations, and access to affordable food and other goods.

The Scoping Document should call for a review of these uses, including how the project will impact:

- the scarcity of urban land in the Mohawk Valley
- property tax collection, including total impact to County, City, School, and Library taxes before and after the project including the impacts on property taxes at alternate sites,
- sales tax collected within Utica and within the entire county before and after the project, including the impacts on sales taxes at alternate sites,

- the degree to which charitable giving will be available in and near the impacted site before and after the project
- the degree to which food, services, and other low-cost goods will be available before and after the project
- the degree to which space will be available for community organizing, worship, and other social activities
- the degree to which the project will displace businesses, people, or other community activities.

ATTRACTIVENESS

The follow address the impact of the proposed project on community plans, character, and aesthetics.

While beauty, design, and aesthetics can rely on subjectivity at times, Alain de Botton has put forward six points for "How to Make a City Attractive" (https://www.citylab.com/solutions/2015/02/what-makes-a-city-beautiful/386291/). These points are as good as any to evaluate the projects impact on the economic, human, and social environment.

The Scoping Document should call for a review of the project's impact on these dimensions when considering the proposal and alternate locations:

1. Order (buildings should be uniform in appearance and layout—to a degree)

- To what degree does the project conform to and uphold form-based code, zoning, scenic and historic guidelines, etc.?
- To what degree to does the proposal protect or promote urban complexity? (I.E.: Avoid being "boring.")

2. Visible life (it's nice to see people walking the streets and working in shop windows)

- To what extent does the project protect or promote street activity?
- To what extent does the project incorporate street-level permeability to the building, display hospital activities, or otherwise put the life of the hospital on show?

3. Compactness (don't sprawl)

- To what extent does design tightly pack in the hospital into the existing city fabric?
- To what extent does the hospital minimize overall land use?

- To what extent does the project promote people living close by as opposed to commuting in from a suburb?

4. Orientation and mystery (a balance of large and small streets should allow for efficient travel... and for getting lost, on occasion)

- To what extent does the project protect, or create a variety of street sizes?
- To what extent does the project protect east/west boulavards such as Columbia and Lafayette Streety and smaller streets such as Carton Ave (formerly Rome St.)
- To what extent does the project prioritize streets for cars rather than people?

5. Scale (a building should be five stories max, unless what it stands for is *really* worth more air space)

- To what extent does the scale of the project conform with the scale of nearby buildings?
- To what extent does the amount of horizontal space utilized conform to urban vitality?

6. A sense of the local (Melbourne should look a little different from Barcelona, because its cultural and geographic qualities are different)

- To what extent is the design "Utica" in design?
- How does the look of the building fit with other iconic structures in Utica?
- To what extent does the project honor the canalway history of the proposed location?

While it is important to weigh the impacts on Utica directly, the scoping document should also evaluate the impacts to the Mohawk Valley overall. The city of Utica is the largest city in the Mohawk Valley. Utica's downtown is essentially the entire region's downtown. To any extent the project may harm the city's urban vibrancy—as the largest and most important urban center in multi-county vicinity—it also hurts the overall region's economic health.

From: Brian Thomas
To: Steve Eckler; kbennett@bsk.com
Cc: Chris Lawrence
Subject: FW: SEQR Environmental Impa concerns
Date: Wednesday, June 20, 2018 5:19:49 PM

Another MVHS SEQRA scoping comment . . . . .

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
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(315) 797-6607 fax

From: Katie Martin [mailto:aiello.katie@gmail.com]
Sent: Wednesday, June 20, 2018 5:02 PM
To: Brian Thomas <bthomas@cityofutica.com>
Subject: SEQR Environmental Impa concerns

To whom it may concern:

Please address the following environmental impact concerns regarding the proposed downtown hospital:

Please provide proof that concerns in this SEQR process will be addressed and how.

Prove ability to complete project:
-Requires updated analysis of all costs (the cost of steel alone is skyrocketing)
-Not just cost analysis statements, but statements with backed up data (fact checked) and available to public. We want to see numbers and details.
-Also proof of data of ability to afford and pay for project to be completed in estimated time.

Prove what medical resources will be available at the new

hospital that Utica and surrounding area does not currently have access to:
-define “state of the art” in every sense that it will be used.
-will the new hospital offer services like pediatrics and a NICU (up to level 4), or will the community still have to drive up to an hour away for these regularly needed services. Why or why not?

Prove ability for growth:
-can the hospital be added on to in the proposed downtown area? Why or why not? If the answer is the building will not be needed to add on to down the road, please prove analysis and studies explaining.

Prove need for 3,000 parking spots as stated by Steve DiMeo:
-why is eminent domain being pursued over a stretch of 25 acres in downtown Utica when 2-5 acres at most will be used for the hospital and the remaining for parking?
-prove the need of each parking spot through study and analysis.

Please prove this project is not overreaching our land and is only utilizing what it needs to fulfill the completion of their proposed new hospital.

Provide site study showing why downtown Utica was the chosen site over the other options:
-show cost analysis and studies proving this is the best option for our city’s environment and surrounding area.

Please note when my husband and I moved back to Utica to open a coffee shop in downtown - the appeal was NOT because of a private hospital. We, like many of our peers, chose a city like Utica because of its history and organic small business growth and entrepreneur mindset. The region marked for the downtown hospital is the next prime real estate for retail and new businesses

to further develop Utica and be the next enticing city that future generations are looking to move to.

The way businesses have been treated in the hospital footprint (and how those of us have been treated who are outside of the footprint) has sent a strong message of what this city really values to the community and specifically my generation that includes young families and entrepreneurs.

We are seeking an apology for how people have been treated and the lack of condemnation of poor communication and low standards tolerated on BOTH sides of the argument - specifically ownership of poor treatment from “yes” downtown people as well towards those who are not comfortable with the downtown location.

Moving forward we are seeking open communication, and an honored and transparent process - legally and morally it is a concern for Utica and so far neither have been evident.

MVHS, Newmvhospital, and our city leadership is responsible for the controversy and lack of transparency revolving our downtown and the future of our healthcare. If this is not corrected moving forward it will result in an exodus of businesses and young people, just as it has already been proven by the leaving of our areas doctors and nurses.

The vacant buildings and remnants of cultural that once was would be a disgrace to our city’s morale and economy.

MVHS and anyone supporting them have a social responsibility as much as an economic one to uphold and fulfill the values and needs of Utica.

Thank you for your time,

Katrina Martin
Owner of Character Coffee at 171 Genesee St Utica, NY

Resident of 23 Parkway Drive Whitesboro

From: Brian Thomas
To: Steve Eckler; kbennett@bsk.com
Cc: Chris Lawrence
Subject: FW: Proposed MVHS Downtown Hospital/Draft Scoping Document
Date: Wednesday, June 20, 2018 3:06:16 PM

Another MVHS SEQRA scoping comment . . . . .

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
Utica, New York 13502
(315) 792-0181 phone
(315) 797-6607 fax

From: Brett Truett [mailto:bbtruett@icloud.com]
Sent: Wednesday, June 20, 2018 3:00 PM
To: Brian Thomas <bthomas@cityofutica.com>
Cc: brock James <brock_jim@nlgroupmail.com>; Brett Truett <btruett@softnoze.com>; #Nhd <editor@nohospitaldowntown.com>
Subject: Re: Proposed MVHS Downtown Hospital/Draft Scoping Document

Telephone +1(315)-794-0401
editor@nohospitaldowntown.com

#NoHospitalDowntown
10-12 Liberty Street
Utica, New York 13501
www.NoHospitalDowntown.com

June 20, 2018

City of Utica
Attn: Mr. Tony Colon, Mr. Joe Priore, Joe Caruso, Mr. George Mitchell and Mr. Fred Matrulli (Planning Board), and Brian Thomas (Department of Urban & Economic Development)
1 Kennedy Plaza
Utica, NY 13502
(Submitted via bthomas@cityofutica.com)

Re: Proposed MVHS Downtown Hospital/Draft Scoping Document

Dear Gentleman:

This message is in response to the Utica Planning Board's first request for public comment on the above referenced "Draft Scoping" document.

Please kindly place the following message into the "Public Comments" section and or the appendix of subsequent, as well as the Final Environmental Impact Statement (FEIS).

"We the group #NoHospitalDowntown on Facebook (with a mailing address of 10-12 Liberty Street, Utica, NY, an Oneida County dba by the same name and with a bank account in good standing at First Source Credit Union, Utica, NY), who members exceed

4,100, wish all parties and organizations involved in the MVHS Downtown Hospital SEQR process to be made aware of our Facebook page. Also our group's website (and all related links) found at www.NoHospitalDowntown.com Our group's formation was inspired by doctors and board members of MVHS that told us they we're forced to vote for a hospital to be built in Downtown Utica. Since 2015 we have advocated against the Downtown Utica hospital concept. Our research and numerous reasons why are clearly stated on our website."

Sincerely,
Jim Brock & Brett Truett
Cofounders
#NoHospitalDowntown

From:	Brian Thomas
To:	Steve Eckler; kbennett@bsk.com
Cc:	Chris Lawrence
Subject:	FW: SEQR - MVHS
Date:	Wednesday, June 20, 2018 2:55:04 PM

Another MVHS SEQRA scoping comment . . . .

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
Utica, New York 13502
(315) 792-0181 phone
(315) 797-6607 fax

From: Watts, Beth E. (DOT) [mailto:Beth.Watts@dot.ny.gov]
Sent: Wednesday, June 20, 2018 12:03 PM
To: Brian Thomas <bthomas@cityofutica.com>
Cc: Sassaman, Guy <gsassaman@ocgov.net>
Subject: SEQR - MVHS

Brian,

As requested, the New York State Department of Transportation (NYSDOT) has reviewed the request for the City of Utica Planning Board to serve as Lead Agency for purposes of the State Environmental Quality Review Act (SEQRA) in relation to the Integrated Health Campus Project proposed by the Mohawk Valley Health System. Upon review of the information provided, the NYSDOT concurs with this request.

It is our understanding that environmental evaluations are currently ongoing. In particular, NYSDOT will be interested in reviewing traffic impacts to the highway network. Please note that a NYSDOT Highway Work Permit will be required for any work performed within the highway or right-of-way.

NYSDOT also reviewed the Draft Scoping Document and have a comment concerning the proposed Street Closures, the segment of LaFayette Street between the North-South Arterial and State Street. This closure to vehicular traffic would impede connectivity and mobility without providing a benefit to pedestrians or cyclists.

We look forward to working with you as the project progresses. Thank you for the opportunity to comment.

Beth Watts, PE, PTOE

Planning & Program Management

NYSDOT – Mohawk Valley Region
207 Genesee Street, Utica, NY 13501
315.793.2451 | beth.watts@dot.ny.gov

From: Brian Thomas
To: Steve Eckler; kbennett@bsk.com
Cc: Chris Lawrence
Subject: FW: Proposed MVHS Downtown Hospital/Draft Scoping Document
Date: Wednesday, June 20, 2018 5:11:58 PM

Another MVHS SEQRA scoping comment . . . . .

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
Utica, New York 13502
(315) 792-0181 phone
(315) 797-6607 fax

From: Brett Truett [mailto:brett@truettfamily.com]
Sent: Wednesday, June 20, 2018 4:02 PM
To: Brian Thomas <bthomas@cityofutica.com>
Subject: Re: Proposed MVHS Downtown Hospital/Draft Scoping Document

Tel: **+1(315)-794-0401** brett@truettfamily.com

Brett Truett
442 Lafayette Street
Utica, New York 13502

www.BetterUticaDowntown.com

June 20, 2018

City of Utica

Attn: Mr. Tony Colon, Mr. Joe Priore, Joe Caruso, Mr. George Mitchell and Mr. Fred Matrulli (Planning Board), and BrianThomas (Department of Urban & Economic Development)

1 Kennedy Plaza

Utica, NY 13502

(Submitted via bthomas@cityofutica.com)

Re: Proposed MVHS Downtown Hospital/Draft Scoping Document

Dear Gentleman:

This message is in response to the Utica Planning Board's first request for public comment on the above referenced "Draft Scoping" document.

Please kindly place the following message into the "Public Comments" section and or the appendix of subsequent, as well as the Final Environmental Impact Statement (FEIS).

⁋- - - s n i p - - -

BetterUticaDowntown (BUD) was formed by the owners of Wilcor International, the Corrigan's who have a multi-generational business located in the targeted downtown hospital concept area.

Their business district was recently home to over 40+ businesses, which includes new Utica Police department and City Court upgrades. Myself, as a new property owner in the Columbia Lafayette Neighborhood (CLN) at 442 Lafayette Street, a city taxpayer with other properties in nearby Bagg's Square, and my personal involvement in many issues facing downtown Utica, caused me to immediately join BUD.

After our first meeting, and later with other members' help, we've created and added content to the website at www.BetterUticaDowntown.com.

On behalf of BUD and myself, we wish all parties and organizations involved in the MVHS Downtown Hospital SEQR process to be made aware our website.

The downtown MVHS hospital concept goes against the character and numerous plans and efforts by private property owners who have been working towards a much different vision. The threat of eminent domain has caused some companies to move and or close down. Progress has stagnated, others are stuck, but only ~40% of property owners have signed agreements to sell to MVHS. Myself and others have no intention of selling.

As lead agency for SEQR, before you go any further in your deliberations, you must provide ALL studies used by MVHS and others in deciding the downtown location was the preferable site over any and all other locations consider. The studies must be made public so that myself, BUD, citizens of Oneida County, and the City of Utica can see the logic as to why the downtown location was selected."

⁋- - - s n i p - - -

Sincerely,
Brett Truett, Publisher
www.NoHospitalDowntown.com⁋

Telephone +1(315)-794-0401 brett@truettfamily.com

Brett B Truett
442 Lafayette Street
Utica, New York 13501

June 20, 2018

City of Utica
Attn: Mr. Tony Colon, Mr. Joe Priore, Joe Caruso, Mr. George Mitchell and Mr. Fred Matrulli (Planning Board), and Brian Thomas (Department of Urban & Economic Development)
1 Kennedy Plaza
Utica, NY 13502

Re: Proposed MVHS Downtown Hospital/Draft Scoping Document

Dear Gentleman:

This letter is in response to the Utica Planning Board's first request for public comment for the above referenced "Draft Scoping" document. While I know the Planning Department does not have to, I kindly request that your board to add the letter in its entirety into a Section or the Appendix of subsequent, and your department's Final Environmental Impact Statement (FEIS).

First, let me say I'm entirely grateful you have declared this project a "Type I" action- I'm in complete agreement! As proposed the hospital concept would have a VERY significant adverse and UNREVERSIBLE impact on Utica's downtown.

So everyone is aware, I co-founded #NoHospitalDowntown shortly after hearing doctors (three hospital board members), were being told, "The new hospital has to go downtown". This was learned in the late summer of 2015. Since this time I have had a large part in curating two website (www.NoHospitalDowntown.com and www.BetterUticaDowntown.com), as well as posting many thousands of message to these group's Facebook pages and other social media platforms.

Why am I so dedicate to this group and its mission?

My first motivation was to counteract lies that were being told, and information that was not accurately shared with our community. As the hospital future in the Columbia Lafayette Neighborhood came into clear focus; the impact to it's

businesses, the history, the buildings, streets, and alleys - knowing about Utica's past urban renewal projects - I became much more concerned.

After meeting and talked with our political leaders, attending meetings where incomplete and or bad information was continually supplied or withheld, concern escalated. My thinking was that a great deal of ignorance was being displayed. For years this has gone on as taxpayer treasure and virtually "millions of dollars" from our region's healthcare spending was being used to promote the downtown hospital concept. My opposition only increased.

We have witnessed politicians and numerous community groups (of which they control, or hold sway over) to work together to try and force a hospital into Downtown Utica. Early on they told me, "Give it a chance, let the hospital develop their concept", "We will make it fit into the neighborhood", and meetings with Landmarks gave some hope. Yet these and other comments have turned out to be a falsehoods or just to "buy more time". We are now faced with the complete destruction of 34 or 25 acres of our downtown's Central Business District.

The hospital concept has VERY few who want, and actually, if everyone in the debate had ALL the information, and ALL the costs, AND allowed a COMPLETE vetting of our $300M opportunity, NOBODY would vote for a "new downtown hospital" – especially if they could foresee the fallout it would bring.

My passion regrettably is to go to court if need be, for years to come if necessary, and to go broke if need be. All to defeat lies that have been perpetrated on what I see as a MASSIVE healthcare farce, and complete downtown development plan farce.

I've addressed you each by name above (and will later copy others below), as you all must realize, **"by going forth with the downtown hospital location you will own this project until your last breath."**

How did I get to this place? Well it has EVERTHING to do with why I've just written the serious words in the previous sentence. Here it goes, it is all about the "E" in SEQRA, see figure 1.

Figure 1.

In 1986 I arrived in Utica to attend SUNY. At the time the college was called the "College of Technology" and I had transferred from SUNY Morrisville where I studied Mechanical Engineering Technology.

My first Utica home was the Hotel Utica, located at 102 Lafayette Street. This historic hotel is located immediately east of the proposed hospital concept. Attending college in Downtown Utica placed me in-and-out of many historic buildings, namely two very significant mill buildings; "Mill Square" and "Globe Mill".

Landing a summer job placed me in another such buildings when I worked for a budding entrepreneur, Frankl Giotto. That in turn

placed me in what is now the Bagg's Square Café building on Broad Street which housed a machine shop, Firschings.

My schooling, work, and other activities put me into many of Utica's old buildings. There, many stories of buildings' pasts, the city's history, companies and people were shared with me.

Later in the future, as a chamber board member I cheered with Governor George Pataki as the hotel reopened after redeveloped. One of the owners and redevelopers was Joseph Curruci, who I called a friend. All these events – stories and buildings - set the course of my life, a life that placed the City of Utica at the top.

After college, and starting a business that eventually met with success, I've purchased a number of properties in and around Utica. I was subsequently married in Hotel Utica, to my wife Michelle who came from NJ - another "transplant" - who also became enamored with the city.

One building we own today is just a few blocks from the proposed hospital concept in Bagg's Square, at 10-12 Liberty Street. More recently, I've purchased the historic town house at 442 Lafayette Street. It lies within the targeted hospital footprint from where I'm drafting part of this response. This historic property gives me greater standing to fight a legal battle, one that I feel is critically important to saving Downtown Utica's Columbia Lafayette Neighborhood.

Since my arrival in Utica I've witnessed many aspects of many different lives, perhaps many more than anyone might every expect; as a college student, landing various jobs, being dirt poor as an inventor hoping to one day strike it rich, owning a South Utica home and living through a winter without heat, experiencing many business ups-and-downs, talking to other start-ups, making 24 trips to establish an office in China, going from "being hungry to dinning as a member at the Fort Schuyler Club", to working on a 20,000 sq. feet downtown home; one with a 1st floor art gallery, home offices, a guest apartment, and an upper floors creative space for future inventors! All during this time I've kept an eye on the business community and political headlines, via the newspapers, as a board member of the Mohawk Valley Chamber of Commerce, various "young professional groups, a Genesis Group "board" member, Leadership Mohawk Valley, as well as other organizations.

Over the last 15 to 20 years, Downtown Utica has seen many efforts to spur development. They include; studies, workshops and Master Plans, symposiums, in addition to new City Legislation and Code Specifications aimed at protecting and define historic buildings and neighborhoods. Numerous people before myself – those who've inspired me - now myself, and others have purchased buildings and created businesses.

We've had such great opportunities because many downtown buildings have "great bones", offered great "long-term upside", and were relatively "very cheap to acquire". Even as some failed, others gave it "a new go". This natural progression and the struggles are actually the events that create; a community, stories, people, their struggles, the buildings and the lore, it all takes many years and define a neighborhood and the people who become attach to it.

Over the last 5 to 10 years Downtown Utica has had a newer wave of developers and businesses. People had and are making huge investments of sweat equity. Some large developers use their cash and or the government's funding to pay $30 to $120 per hour, yet many of us smaller folks started by working hundreds and thousands of hours for FREE, that's "sweat equity". We all have inspired each other. Some were alive and offered a helping hand, while others have been dead for 100 years, but their stories inspired us. Maybe it was the buildings and streets they built, and even though we'd never know them, that's where the encouragement came.

These are things are hard to quantify, but it and more create an "Environment", one that today is successfully drawing paying customers into downtown, only more recently have these been residents. Finally, in just the last three to five years this momentum has moved closer and closer to a tipping point. Yet from almost nowhere… we had news of a hospital?

The downtown hospital concept was a surprise to many. It was to me. I was focused, growing my business, making trips to China, one day Jim Brock called, "they want to bulldoze downtown for a hospital." Ironically, on two points; I departed the chamber board – where I met Jim Brock (#NoHospitalDowntown Cofounder) when the chamber gave up on the building they owned; I requested they embrace and seek redevelopment, but didn't. Today this building has become the Landmarc Building that holds-up Ocean Blue. The more I learned about the hospital the less I liked and Jim and I have grown the movement to over 4,100 people.

The downtown hospital concept truly “flips the script” on what many early adopters saw ahead for downtown. This massive concept never was anticipated in the city’s Master Plans, wasn’t in the historic plans and marketing efforts. Now we have had three years of dark clouds, a huge question mark of a very out-of-scale “suburban hospital”. One with a sea of parking, one that cuts-out and destroys more of what makes downtown the opportunity myself and others have been working towards. If they bulldoze the many buildings, dream will be lost, and future developers will not have the opportunities of just described.

Our group is clear proof that many do not want a hospital in downtown. The reason vary, but it is very safe to say, “the will of the people is being ignored.” Our group’s research and study confirms the hospital concept is more about hopeful “economic development activity” than “improved regional healthcare”.

Those saying “yes” to the downtown concept have been influenced by undue political forces and others that have minor to substantial conflicts of interest. We know that many others would voice a “no” position if not silenced due to political or employer pressures. Those on boards of “yes” groups all live in suburbs and have little appreciation and or understanding of what downtown living and building reuse is about.

Is there room in a EIS Draft Scope for my emotionally charged words above? If you suggest the answer is “No”, then I’ll suggest that individually, and as a project group, you must think hard about what makes a city a city, a downtown a downtown, and a neighborhood a neighborhood.

Have you read Jane Jacobs? Did you see Little Pink House? Have you read Michael Bosak, from the Great Utica Landmarks Society? Or read recent urban renewal reviews by Brian Howard, Oneida County History Center, Executive Director, who recently wrote:

"**What happened in Downtown Utica during urban renewal was similar to what was happening across the country. While it wasn't appreciated at the time, urban renewal was destroying essential elements of the city's character and creating an identity crisis that would last for generations.**"

If the Environmental Impact Statement you are tasked with creating fails to mention these topics, then VERY important issues to downtown development and neighborhood development will be unheard. If in fact you feel my request and story is absurd, would you believe that the actions thus far on the hospital

project has given me great reason to care much less about the City of Utica? It is true, as others have echoed my sentiment.

Thus I'll implore you that you must understand, creating a huge hospital district and erasing a neighborhood - because political motivations merged with what someone believes is a great economic development plan – is very detrimental to Utica's future that this EIS/SEQRA lack the means to gage.

My wish is to make your department aware of my story, as well as all others considering this project. I've left the more technical aspects to other concerned citizens from which I know you have heard.

Without adding my feelings conveyed here to the Final Scope (which the EIS will provide involved agencies) I believe your work would be inaccurate, misleading, and offer an incomplete picture of the proposed project's impact.

Finally, your department and others who will review the SEQRA process, must know that myself and possibly others will challenge this "downtown concept" in subsequent legal actions. This was pronounced over two years ago, and those in charge have moved forward regardless.

Sincerely,

Brett Truett

From:	Brian Thomas
To:	Steve Eckler; kbennett@bsk.com
Cc:	Chris Lawrence
Subject:	FW: SCOPING Submission - Utica Planning Board 6-20-18
Date:	Wednesday, June 20, 2018 5:05:58 PM
Attachments:	HOSPITAL SCOPING 6-20-18.docx

Another MVHS SEQRA scoping comment . . . . .

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
Utica, New York 13502
(315) 792-0181 phone
(315) 797-6607 fax

From: frank vescera [mailto:frankvescera@gmail.com]
Sent: Wednesday, June 20, 2018 3:48 PM
To: Brian Thomas <bthomas@cityofutica.com>
Cc: O D - NEWSROOM <news@uticaod.com>; O D - Perritano, Fran <fperrita@uticaod.com>; O D Dudajek, Dave <ddudajek@uticaod.com>; O D Johns, Ron <rjohns@uticaod.com>; WIBX - <news@wibx950.com>; WIBX - Jeff Monaski <jeff.monaski@townsquaremedia.com>; WIBX - Jeff Monaski <jeff@wibx950.com>; WIBX Bill Keeler <billkeeler1@me.com>; WIBX - Jim Rondinelli <jimr@wibx950.com>; WIBX, Andrew Derminio <Andrew.Derminio@townsquaremedia.com>; WKTV Gary Liberatore <gliberatore@wktv.com>; WKTV News <newslink2@wktv.com>; WKTV Shipman - Don <DShipman@wktv.com>; WKTV Steve Mc Murray <smcmurray@wktv.com>; WUTQ - Talk Of The Town <Talk@wutqfm.com>; WUTQ TALK - Aiello, Jason <Jason@rosergroup.com>; WUTQ TALK - Aiello, Jason <Jason@wutqfm.com>; WUTR TV NEWS <news@wutr.tv>
Subject: SCOPING Submission - Utica Planning Board 6-20-18

Brian,

Please see attachment and acknowledge that you received this transmission.

Respectfully,

Frank Vescera

_____

bthomas@cityofutica.com

In 2012 **Experts** at the United States Department of Transportation (DOT) created an EMERGENCY RESPONSE GUIDEBOOK for "First-Responders" during the initial phase of a Dangerous Goods / Hazardous Materials transportation incident. They designated a 1/2 mile corridor on any train track route used to transport flammable oil & toxic materials as an **Evacuation RED ZONE**.

On January 28, 2014, NYS Governor Andrew Cuomo issued Executive Order No. 125: Directing DEC, DOT, DHSES, DOH, and NYSERDA to Strengthen the State's Oversight of Shipments of Petroleum Products for rail line safety.

Nevertheless , those warnings did not halt the demands of a ring of overbearing local elected & public officials to build a new Utica hospital downtown within that known train toxic spill **Evacuation RED ZONE**.

Building a Utica hospital downtown inside an evacuation toxic **RED ZONE** is like knowingly building a Nuclear Power Plant on a **dormant volcano site** or an **earthquake fault line**.

However, the back-room relentless strong-arm tactics that have been used from the beginning were recently revealed when that ring of elected and public officials were caught exchanging deceptive, threatening and insulting emails intended to manipulate and crush the public into submission.

The email exchanges raised questions of what many believed to be the widespread use of deception, official misconduct, abuse of power and betrayal of the public trust in order to rig the **Evacuation RED ZONE** downtown outcome.

Concerned citizens, MVHS hospital officials and others are continually threatened that if the hospital is not built in the downtown **Evacuation RED ZONE** it will not be built anywhere, especially at St. Luke's.

This was evidenced in one of the following email exchanges.

(11-5-15) **"I feel like walking away from this whole thing and telling the community and hospital if you don't want this thing downtown then good luck at St Luke's and don't come see me for one ounce of state support"**

That being said the Utica Planning Board in its SCOPING Process must provide the public with:

1. Valid & precise assurances that building the hospital in the downtown **Evacuation RED ZONE** is a moral endeavor.

2. Detailed & explicit plans for the evacuation of the hundreds of bed-ridden patients and people on operating tables that would be trapped during a toxic spill catastrophe?

   There aren't 400 ambulances available to transport them. If there were 400 ambulances where would the patients be taken?

From:	Brian Thomas
To:	Steve Eckler; kbennett@bsk.com
Cc:	Chris Lawrence
Subject:	FW: Comments of Wilcor International, Inc. and The Claris, LLC to Draft Scope for Proposed MVHS Downtown Hospital
Date:	Wednesday, June 20, 2018 3:07:03 PM
Attachments:	Correspondence to CUPB re MVHS Draft Scope 6 19 18.pdf

Another MVHS SEQRA scoping comment . . . . .

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
Utica, New York 13502
(315) 792-0181 phone
(315) 797-6607 fax

From: Douglas H. Zamelis, Esq. [mailto:dzamelis@windstream.net]
Sent: Wednesday, June 20, 2018 11:37 AM
To: Brian Thomas <bthomas@cityofutica.com>
Cc: 'Karen Corrigan-Rider' <karen@wilcor.net>; frankmontecalvo@roadrunner.com
Subject: Comments of Wilcor International, Inc. and The Claris, LLC to Draft Scope for Proposed MVHS Downtown Hospital

Dear Mr. Thomas,

Please make the attached comments part of the Planning Board's official SEQRA record for the proposed MVHS Downtown Hospital.

Thank you for your courtesy and assistance.

Doug

Douglas H. Zamelis, Esq.
The Law Office Of Douglas H. Zamelis
7629A State Highway 80
Cooperstown, New York 13326
Tel: (315) 858-6002
Fax: (315) 858-7111

THE LAW OFFICE OF
DOUGLAS H. ZAMELIS

June 19, 2018

VIA EMAIL [bthomas@cityofutica.com]

City of Utica Planning Board
Attention: Mr. Brian Thomas, Commissioner, City of Utica, Department of Urban & Economic Development
1 Kennedy Plaza
Utica, NY 13502

Re: Draft Scoping Document, MVHS Proposed Downtown Hospital

Dear Chairman Matrulli and Members of the City of Utica Planning Board:

This office represents Wilcor International, Inc. ("Wilcor") and The Claris, LLC ("Claris") in connection with the proposed MVHS Downtown Hospital (the "Project"). This correspondence follows oral comments previously provided to the Utica Planning Board on June 6, 2018 by Karen Corrigan-Rider and Sean Corrigan concerning the Draft Scoping document for the Project, and to avoid unnecessary duplication, Wilcor and Claris join in the written comments of Frank Montecalvo and this correspondence incorporates Judge Montecalvo's written comments by reference.

As previously indicated by Ms. Corrigan-Rider and Mr. Corrigan at the June 6 Scoping Meeting, the Claris property and a substantial portion of Wilcor's business is in the Project footprint, and if the project were to be approved, many of Wilcor's employees, several of whom live in the City of Utica, would be forced to alter their commute if Wilcor is to continue its successful business in the Mohawk Valley.

The draft scope by MVHS is a starting point, but it is a mere skeleton of what a proper EIS scope for a project of this scale and magnitude should be. We understand that the SEQRA process involves some give and take, and from this first draft scope MVHS expects to take, and the community to give. This is of course the applicant's first draft, and we urge the Board to propose a more comprehensive, reasonable and realistic Scope for a Draft Environmental Impact Statement ("DEIS") that will more fully achieve SEQRA's objective of elevating environmental considerations to equal footing with social and economic considerations. Since the final Scope

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will provide the blueprint for this entire environmental impact review, it is imperative that the Planning Board assemble and compose a proper Scope that will be sufficiently protective of the environment. It will be the Board's determination whether the final Scope is adequate, so please give this Scoping document and this effort your most careful consideration, and please do not rely entirely on the applicant's draft Scope.

We would also like to reiterate for the record that how an applicant will finance a particular project economically is not within SEQRA's purview and is not typically relevant to a project's purpose and need, therefore we ask that the state grant not be referenced or discussed in the section on purpose and deed as those two parameters need to be independently and clearly established in this record. Spending money for the sake of spending money is not a legitimate purpose in and of itself, and a project's need must be based on established and objective criteria.

SEQRA's broad definition of "environment" at 6 NYCRR Section 617.2 includes existing patterns of population concentration, distribution or growth, and existing community or neighborhood character. This Project would affect multiple communities and neighborhoods in Oneida County, not just downtown, and it would bring drastic changes to various neighborhoods and communities around the proposed *and existing* facilities. We don't believe the draft Scope properly addresses these existing patterns and character, or the significant impacts the Project would have on our existing patterns of growth and development in our neighborhoods. We urge the Board to take the necessary "hard look" demanded by SEQRA and analyze how the Project would affect the neighborhood and community where the Project is proposed, including people and businesses such as Wilcor who would be displaced, as well as those around the existing facilities, including the associated medical service businesses who have made significant investments around the existing facilities. Please don't gloss over these important subjects, please make sure that they're subject to thorough analysis and a robust discussion in the DEIS, and please make very sure that adequate mitigation is imposed for all of these impacts.

Similarly, SEQRA requires that all Draft Environmental Impact Statements identify and discuss all reasonably related short term and long-term impacts, cumulative impacts and other associated environmental impacts. Other associated environmental impacts from the Project include the secondary impacts that would result from the displacement of property owners and businesses within the footprint of the Project. While strictly economic impacts are not directly within the purview of SEQRA, to the extent this project would substantially interfere with and alter the city's and the county's existing patterns of population, concentration distribution and growth, and significantly affect several existing neighborhoods and communities, these secondary impacts to displaced property owners and businesses must be thoroughly analyzed and mitigated.

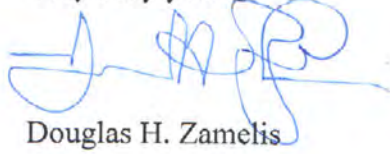
The draft Scope will determine the only alternatives to be analyzed and discussed in the DEIS, and if an alternative is not in the final Scope it won't be considered at any time in the future so it's extremely important that the reasonable range of reasonable alternatives in the final Scope be as broad and comprehensive as the Project is large in scale and scope. At the very least,

the final scope should include an alternative that would involve upgrading, renovating, and/or retrofitting MVHS' existing facilities to achieve its objective of improving the delivery of patient care. Such an alternative is viable and could likely achieve significant advancements and efficiencies in patient care at substantially less cost than the construction of a new facility. We implore the Planning Board to make sure the range of alternatives specified in the final Scope is appropriately broad and reasonable, and that it omits unreasonable "throwaway" alternatives such as the New Hartford Shopping Center.

We expect the Planning Board to do its own independent and thorough review of the draft Scope, to rely on your own professionals and independent consultants instead of solely on those working for MVHS, and to err on the side of inclusion instead of exclusion when it comes to finalizing the Scope, because if something is not in the Scope, it won't be in the DEIS, and any of our later comments on any matters not addressed in the DEIS will be completely ignored. That's why this Scoping process and document is so critically important.

Please make these written comments on behalf of Wilcor and Claris part of the official SEQRA record for this Project. Thank you for the opportunity to comment.

Very truly yours,



Douglas H. Zamelis

cc:
Wilcor International, Inc.
Att: Karen Corrigan-Rider
The Claris, LLC
Att: Shawn Corrigan

From: Brian Thomas
To: Steve Eckler; kbennett@bsk.com
Cc: Chris Lawrence
Subject: FW: Proposed MVHS Downtown Hospital/Draft Scoping Document
Date: Wednesday, June 20, 2018 5:17:29 PM

Another MVHS SEQRA scoping comment . . . . .

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
Utica, New York 13502
(315) 792-0181 phone
(315) 797-6607 fax

From: James Zecca [mailto:zec101@aol.com]
Sent: Wednesday, June 20, 2018 4:59 PM
To: Brian Thomas <bthomas@cityofutica.com>
Subject: Proposed MVHS Downtown Hospital/Draft Scoping Document

June 20, 2018

City of Utica

Attn: Mr. Tony Colon, Mr. Joe Priore, Joe Caruso, Mr. George Mitchell and Mr. Fred Matrulli (Planning Board), and BrianThomas (Department of Urban & Economic Development)

1 Kennedy Plaza

Utica, NY 13502

(Submitted via bthomas@cityofutica.com)

Re: Proposed MVHS Downtown Hospital/Draft Scoping Document

As lead agency for SEQR, before you go any further in your deliberations, you must provide ALL studies used by MVHS and others in deciding the downtown location was the preferable site over any and all other locations consider. The studies must be made public so that the citizens of Oneida County, and the City of Utica can see the logic as to why the downtown location was selected.

Also, please take this information into consideration as well:

Red Zone Issue

long freight trains coming through Utica carry hazardous, flammable, and combustible materials far more dangerous than most people realize and by knowing these facts
we have yet another major reason not to locate our ONLY new hospital in this zone of danger called the Red Zone.

Up to 30 of these types of trains now run through Utica every week.
Many have 100 cars stretching a mile down the tracks. This is a 4,000 % increase in this type of travel though this area in the past
Six years.

A high-risk “Red Zone” has been declared along both sides of the railroad track to prepare emergency response for spills, fire, toxic fumes, and even explosions from a track failure or train derailment or just plain accident that occurred here just recently.

The US Dept. of Transportation puts out an emergency response guide
annually. Please review this document.

James A. Zecca

2662 Edgewood Road
Utica, NY 13501

Sent from my iPhone
Jim Zecca

From:	Brian Thomas
To:	Steve Eckler; kbennett@bsk.com
Cc:	Chris Lawrence
Subject:	FW: Send data from MFP07716197 06/21/2018 15:33
Date:	Thursday, June 21, 2018 3:48:14 PM
Attachments:	DOC062118-06212018153351.pdf

Another MVHS SEQRA scoping comment . . . . .

Received after the stated deadline, I might add, but thought that you would want to see it anyway.

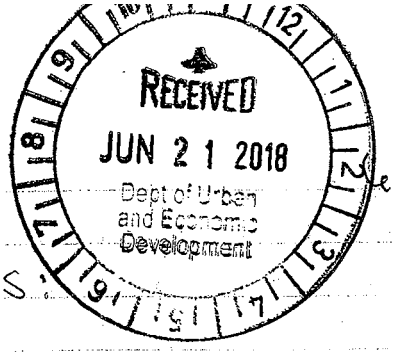
I got the voicemail that you left earlier, Steve. I will be out on vacation starting next Friday, June 29th and won't be back in the office until Tuesday, July 10th.

Brian

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
Utica, New York 13502
(315) 792-0181 phone
(315) 797-6607 fax

-----Original Message-----
From: Urban Scan [mailto:ubrancopy@cityofutica.com]
Sent: Thursday, June 21, 2018 3:34 PM
To: Brian Thomas <bthomas@cityofutica.com>
Subject: Send data from MFP07716197 06/21/2018 15:33

Scanned from MFP07716197
Date:06/21/2018 15:33
Pages:2
Resolution:600x600 DPI



6/19/18

To Brian Thomas:

Regarding hospital downtown:

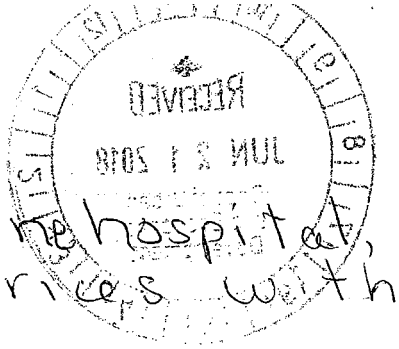
1) Displacement of bussiness owners and thier livelihood. Some just sunk alot to get site finished. Now you want to disrupt.

2) Are you aware 3,000 people in St Elizabeth & Faxton are to lose thier jobs. St Lukes is secure due to Union

3) Proposed site near RR tracks if toxic fumes; not good choice. You have a wreck or derailment Fumes in air for miles - you can't evacuate? Where to go with all the patients? You say we will have closed system but the employees on duty are all you have - no one can get in to Relieve. Families worried. etc, etc, etc

4) All in one basket if closed to flu or something else.

5) Larger Facility - no good for older people to get around in. Given no choice - if only



one hospital, it's a monopoly. Prices with no ceiling.

6) Your Commitee already made of thier mind; you only are reaching out to try and quiet down that MR Brindisi didn't want citizens asked for opinion. Your going to do as you want because A. Coumo wants hospital downtown or you don't get the money. A. Coumo wants all cities to be mini-NYC's. We are Not! We are Utica we are upper NY state. We use to have a downtown to shop in and browse. The Christmas shopping with the smells of christmas was lost over the years.

I know this is a waste of my time and falls on deaf ears.

Sincerely,
Connie Golleglly
Grew up in East Utica

From: Brian Thomas
To: Steve Eckler; kbennett@bsk.com
Cc: Chris Lawrence
Subject: FW: Proposed MVHS Downtown Hospital/Draft Scoping Document
Date: Thursday, June 21, 2018 4:23:46 PM

Another MVHS SEQRA scoping comment . . . . .

I replied to Jim stating that I would share this e-mail with those who were involved in the SEQRA scoping but reminded him that the stated and published deadline for submitting comments was COB yesterday. My intention is to do the same for all comments received going forward.

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
Utica, New York 13502
(315) 792-0181 phone
(315) 797-6607 fax

From: James Zecca [mailto:zec101@aol.com]
Sent: Thursday, June 21, 2018 4:18 PM
To: Brian Thomas <bthomas@cityofutica.com>
Cc: Brett Truett <btruett@softnoze.com>
Subject: Fwd: Proposed MVHS Downtown Hospital/Draft Scoping Document

Sent from my iPhone
Jim Zecca

Begin forwarded message:

> **From:** Joseph Bottini <jpbottini@roadrunner.com>
> **Date:** June 21, 2018 at 11:35:45 AM EDT
> **To:** Brett Truett <btruett@softnoze.com>, Dan Walker <dan@walkerglobal.net>, 'Cassandra Harris-Lockwood' <charrislockwood@gmail.com>, 'Craig Miles' <craigalanmiles@gmail.com>, 'Donna Beckett' <beckhop69@yahoo.com>, 'James G Brock' <brock_jim@nlgroupmail.com>, 'Jay groah' <jlgroah@gmail.com>, 'Jim Brock' <jimbrock@dreamscape.com>, 'Jim Zecca' <zec101@aol.com>, 'Joe Cerini' <citationgraphics@aol.com>, 'Jonathan Hansen Brock' <jminorhansen@yahoo.com>, 'Karen Corrigan-Rider' <karen@wilcor.net>, '"Kyle W. Braunlich"' <kylebraunlich@yahoo.com>, 'Lou Poccia' <loupoccia@yahoo.com>, metzlerprinting@yahoo.com, 'Michael Bosak' <michael_bosak@hotmail.com>, 'Michael Galime' <michael.galime@gmail.com>, 'Michael Gentile' <mgentile51589@gmail.com>, 'Michael Lehman' <mjlehman1@gmail.com>, mservello53@gmail.com, 'paul hage' <paulhage17@hotmail.com>, 'paul hage' <paul.hage@hotmail.com>,

'Penny Bosak' <penny.bosak@ny.usda.gov>, rachel@compassionutica.com, 'Shawn Corrigan' <shawn@wilcor.net>, 'steve gra nt' <steve1920@verizon.net>, 'Steve Keblish' <uticagop@gmail.com>, 'steve metzler' <smetzler@verizon.net>, 'Sue Arcuri' <suearcuri1@yahoo.com>, 'Tim Trent' <timtrent@usa.net>
Subject: Re: Proposed MVHS Downtown Hospital/Draft Scoping Document

To Whom I t May Concern:

Re: Proposed MVHS Downtown Hospital/Draft Scoping Document
This message is in response to the Utica Planning Board's first request for public comment on the above referenced "Draft Scoping" document. Please kindly place the following message into the "Public Comments" section and or the appendix of subsequent, as well as the Final Environmental Impact Statement (FEIS).
Many historic places were obliterated, marginalized or denigrated with past projects.

Examples:

1950s: Urban Renewal - Iconic Richard Upjohn building and more destroyed
1960s: Reconstruction of Route 5S - Old Fort Schuyler Park obliterated
1970s: Bagg's Square Bridge Constructed - Birthplace of Utica (park) marginalized, Maria Proctor legacy denigrated

Many other nationally significant locations obliterated:

American Express headquarters (directly north of Bagg's Hotel on the Square

locations for experiments and founding of telegraph and Associated Press (Dudley -Triangle- Building

The hospital downtown footprint will do likewise.

Examples:

Home of Theodore Faxton, the incubator discussion meetings to devise the telegraph company and the Associated Press happened here.

The route of General Lafayette's visit to Utica in 1824 will be destroyed.

Homestead of John Butterfield where General Dan Butterfield, Civil War General and composer of TAPS lived.

One must be candid and state the obvious.
Few of these places have been fully recognized or celebrated in the past.
This has been due to the vast local-history ignorance of politicians and local government leaders and/or an unwillingness to address this issue.
For present leaders to continue in this ignorant void of our community's legacy (and proud history) is an error of magnitude proportions.
Ignorance is understandable. Not everyone is interested in history.
However, when folks, who are responsible for making decisions that affect our glorious historic legacy, are unwilling to listen, that is stupidity.

The above is just a brief plea for considering the local-history of this greater Utica community in your planning for a state-of-the-art health facility.

I am willing to meet with your board of the whole, or with any member or group of members, at your convenience to further explain the position of

salvaging the little history left that has not been uselessly and cruelly destroyed.

Joseph P. Bottini - Oneida County Historian/Retired History Teacher
9440 Willowbrook Lane
Sauquoit, New York 13456
jpbottini@roadrunner.com
315 272 9986 cell
315 737 9317 home

From:	Brian Thomas
To:	Steve Eckler; kbennett@bsk.com
Cc:	Chris Lawrence
Subject:	FW: scope comments
Date:	Friday, June 29, 2018 10:31:46 PM
Attachments:	4426_001.pdf

Just received this today from DEC . . . .

City of Utica, New York
Department of Urban & Economic Development
Brian Thomas, AICP - Commissioner
1 Kennedy Plaza
Utica, New York 13502
(315) 792-0181 phone
(315) 797-6607 fax

From: Tyoe, Terry (DEC) [mailto:terry.tyoe@dec.ny.gov]
Sent: Friday, June 29, 2018 3:36 PM
To: Brian Thomas <bthomas@cityofutica.com>
Subject: scope comments

Brian,
A hard copy of this is going into the mail today but I have a note that comments should be in by today so I wanted to get a hard copy to you.

If you have any questions, please give me a call at (315) 793-2746. I should be in the office all next week.

Terry

Terry Tyoe
Environmental Analyst 2

New York State Department of Environmental Conservation
Division of Environmental Permits
Utica State Office Building Rm 1404
207 Genesee Street Utica NY 13501
Permits Phone #'s: 315-793-2555 / 315-235-0331
315-793-2740 / 315-793-2746

www.dec.ny.gov

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Permits, Region 6
207 Genesee Street, Utica, NY 13501-2885
P: (315)793-2554 F: (315) 793-2748
www.dec.ny.gov

June 28, 2018

Brian Thomas, Commissioner
City of Utica Planning Board
1 Kennedy Plaza
Utica, New York 13502

Dear Commissioner Thomas,

We offer the following in response to the draft scope document received May 25, 2018.

- The NYSDEC contact info may be changed to:
  NYSDEC – Division of Environmental Permits
  Utica State Office Building Room 1404
  207 Genesee Street
  Utica, New York 13350

- When required, the following permits are managed through the Bureau of Water Permits, General Permits Section, located in the Central Office, 625 Broadway, Albany NY 12233-3505.
  - SPDES Phase II Multi Sector General Permit (MSGP) for Stormwater
  - Construction Activity (Permit Number: GP-0-10-001)

  For this reason, you may choose to add that office as a contact as well.

- DEC is not listed as a potential agency under "Water and Wastewater System Improvements Approval of Plans" in Table 1, Potential Permits and Approvals. Please note that DEC approval of new or modified municipal sanitary sewers serving the proposed project may be required under 6 NYCRR Part 750-2.10(a). If a sanitary sewer lateral serving the proposed project is designed to convey 2,500 gallons per day or more, then DEC approval of the connection may be required under 6 NYCRR Part 750-1.2(82) and 6 NYCRR Part 750-2.10(h)(3)(i). Therefore, it is recommended that DEC be included as an agency in Table1, Potential Permits and Approvals, under Water and Wastewater System Improvements Approval of Plans.

6 NYCRR Part 360 regulations Have recently been updated which may have impacts regarding the management and disposal of materials during both the demolition and construction phases. As plans progress, please contact Sarah Harrison, Division of Materials Management, (315) 793-2558 to insure compliance with the revised regulation's.

Regulatory guidance documents for the various programs are available at:
https://www.dec.ny.gov/regulations/397.html
Guidance specifically related to Noise and Visual impacts may be found at:
https://www.dec.ny.gov/regulations/2374.html

If you have questions about these comments, please contact me at (315) 793-2746.

Sincerely,

Terry Tyoe
Environmental Analyst 2
NYS DEC Utica

ecc: T. Voss, Regional Permit Administrator, Watertown
cc: File