

## Chapter Three

# AIRPORT FACILITIES AND IMPROVEMENTS

### 3.1 AIRPORT FACILITIES

Facilities at an airport can be divided into two distinct categories: airside facilities and landside facilities. Airside facilities include those directly associated with aircraft operations. Landside facilities include those necessary to provide an interface between surface and air transportation, and support aircraft servicing, storage, maintenance, and operational safety.

#### 3.1.1 Airside Facilities

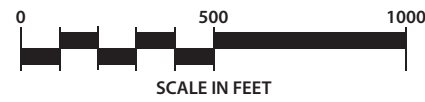
Airside facilities generally include, but are not limited to, runways, taxiways, connecting taxiways, airfield lighting, and navigational aids. As depicted on **Exhibit 3A**, Half Moon Bay Airport is served by one runway. Runway 12-30 is 5,000 feet long and 150 feet wide and is constructed of concrete with an asphalt overlay. Both runway ends have displaced landing thresholds. A displaced landing threshold shifts the aircraft approach touch down to a point other than the designated beginning of the runway. In addition to the runway, there is a taxiway system to provide access to the various facilities at the airport. **Table 3A** summarizes the basic runway data for Half Moon Bay Airport.





**LEGEND**

--- Airport Property Line



Google Earth Date of Imagery: 10/31/11





**TABLE 3A  
Runway Data  
Half Moon Bay Airport**

	RUNWAY	
	12	30
Length (feet)	5,000	
Width (feet)	150	
Surface Material	Asphalt -Concrete	
Pavement Strength (lbs.) Single Wheel	12,500 <sup>1</sup>	
Approach Aids	PAPI-2	PAPI-2, REIL
Instrument Approach Procedures	GPS	GPS
Displaced Threshold (feet)	752	762
Fixed Wing Aircraft Traffic Pattern	Left	Right

PAPI Precision Approach Path Indicator  
 REIL Runway End Identifier Lights  
 RNAV Runway Area Navigation  
 GPS Global Positioning System

<sup>1</sup> Load bearing capacity of the runway is set at 12,500 administratively.  
 Source: FAA Digital Airport Facility Directory, March 7, 2013.

### 3.1.2 Landside Facilities

Landside facilities are essential to the daily operation of the airport and consist primarily of those facilities required to accommodate aircraft, pilots, and passengers while they are at the airport. Landside facilities at Half Moon Bay Airport are depicted on **Exhibit 3A**. As noted on the exhibit, landside facilities are all located on the east side of the airport. These include the terminal building, aircraft storage hangars, a fuel dispensing/storage facility, and two fixed base operators. The terminal building houses the Airport Operations Office and a privately operated restaurant. Fuel service is operated by the County; the aircraft maintenance providers are privately operated. The airport has 21 Port-a-Port hangars, T-hangars, and conventional hangars scattered along the length of the existing airport taxiways (see **Exhibit 3A**). These hangars are used for aircraft storage.

### 3.2 AIRPORT ACTIVITY DATA

Airport activity is defined as the take-offs and landings by aircraft operating at the facility; this is also referred to as aircraft operations. Activity is further described as either *local*, indicating aircraft practicing take-offs and landings (i.e., performing touch-and-go's), or *itinerant*, referring to the initial departure from or final arrival at the airport.

**Table 3B** provides a summary of operations for the existing condition (2012) and long range 20-year (2032) forecast year. Since Half Moon Bay Airport does not have an airport traffic control tower, precise operations records are not available. Therefore, an FAA-approved statistical methodology for estimating general aviation operations using local

variables was utilized. This method, the *Model for Estimating General Aviation Operations at Non-Towered Airports*, was prepared for the FAA Statistics and Forecast Branch in July 2001. This report develops and presents a regression model for estimating general aviation operations at non-towered airports. The model was derived using a combined data set for small towered and non-towered general aviation airports and incorporates a dummy variable to distinguish the two airport types. In addition, the report applies the model to estimate activity at 2,789 non-towered general aviation airports contained in the FAA *Terminal Area Forecast*. The estimate of annual operations at Half Moon Bay Airport was computed using the recommended equation (#15) for non-towered airports. Independent variables used in the equation include airport characteristics (i.e., number of based aircraft, number of flight schools), population totals, and geographic location. This equation yielded an annual general aviation operations estimate of 46,832. Operational 20-year forecasts were generated assuming slight growth at 1.2 percent annually on average.

**TABLE 3B**  
**Operational Fleet Mix**  
**Half Moon Bay Airport Aircraft Fleet Mix and Operations**

Operations	2012	2032
Itinerant GA and Air Taxi	23,416	29,750
Local GA	23,416	29,750
<b>Total Operations</b>	<b>46,832<sup>1</sup></b>	<b>59,500<sup>2</sup></b>

Source: Operational fleet mix derived from an inventory of existing operations at the airport and instrument flight rule (IFR) flight database information from the Airport IQ website.

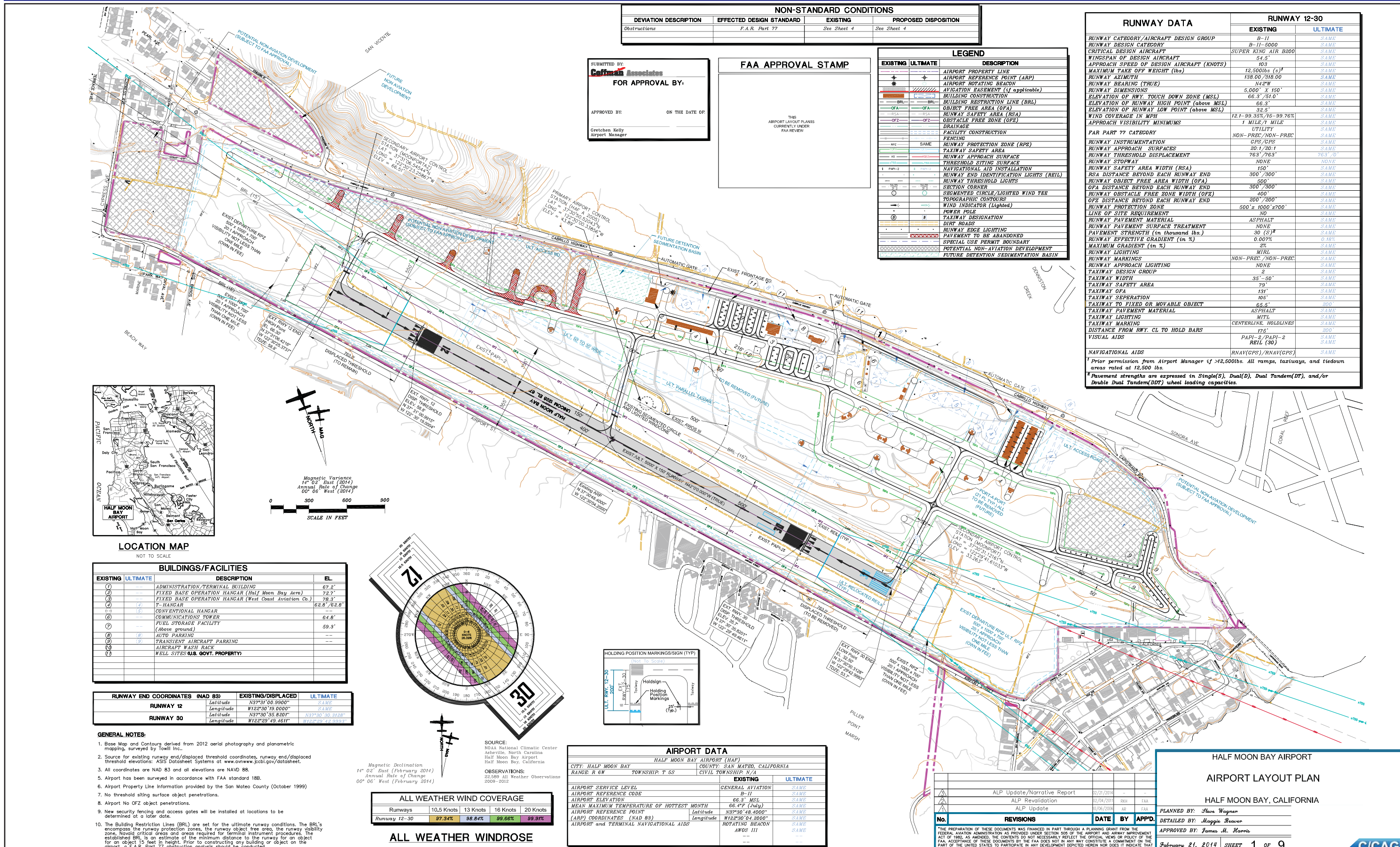
<sup>1</sup> Generated utilizing FAA's *Model for Estimating General Aviation Operations at Non-Towered Airports Using Towered and Non-Towered Airport Data*, July 2001.

<sup>2</sup> Operational forecasts prepared by Coffman Associates as part of the ALP Update and Narrative Report project an average annual growth rate of 1.2 percent through 2032.

### 3.3 AIRPORT FUTURE IMPROVEMENTS

**Exhibit 3B** depicts the Half Moon Bay Airport layout plan (ALP) drawing provided by the San Mateo County Department of Public Works, Airport Division. This drawing depicts both the current and planned facilities for the airport. Potential aircraft hangar locations, on-airport access roads, and parallel taxiway improvements are shown in blue dashed lines. The 2013 ALP calls for the removal of the 762-foot displaced threshold from Runway 30. This differs from the previous ALP, which called for the removal of the 752-foot displacement from Runway 12 and the 762-foot displacement from Runway 30. The 2013 ALP was submitted to the FAA in September 2013 for review.





NON-STANDARD CONDITIONS			
DEVIATION DESCRIPTION	EFFECTED DESIGN STANDARD	EXISTING	PROPOSED DISPOSITION
Obstructions	F.A.R. Part 77	See Sheet 4	See Sheet 4

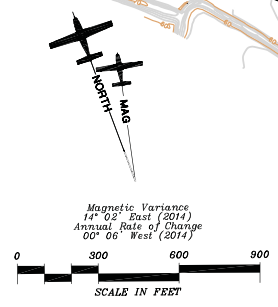
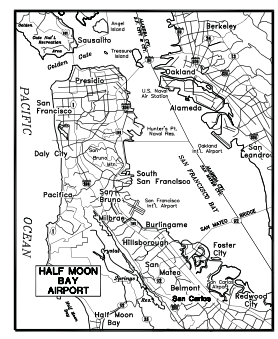
SUBMITTED BY:  
**Coffman Associates**  
 FOR APPROVAL BY:  
  
 APPROVED BY: \_\_\_\_\_ ON THIS DATE OF: \_\_\_\_\_  
 Gretchen Kelly  
 Airport Manager

**FAA APPROVAL STAMP**  
 THIS AIRPORT LAYOUT PLANS CURRENTLY UNDER FAA REVIEW

LEGEND		
EXISTING	ULTIMATE	DESCRIPTION
---	---	AIRPORT PROPERTY LINE
+	+	AIRPORT REFERENCE POINT (ARP)
*	*	AIRPORT ROTATING BEACON
---	---	AVIGATION EASEMENT (if applicable)
---	---	BUILDING CONSTRUCTION
---	---	BUILDING RESTRICTION LINE (BRL)
---	---	OBJECT FREE AREA (OFA)
---	---	OBJECT FREE ZONE (OFZ)
---	---	RUNWAY SAFETY AREA (RSA)
---	---	DRAINAGE
---	---	FACILITY CONSTRUCTION
---	---	FENCING
---	---	RUNWAY PROTECTION ZONE (RPE)
---	---	TAXIWAY SAFETY AREA
---	---	RUNWAY APPROACH SURFACE
---	---	THRESHOLD SITING SURFACE
---	---	NAVIGATIONAL AID INSTALLATION
---	---	RUNWAY END IDENTIFICATION LIGHTS (REIL)
---	---	RUNWAY THRESHOLD LIGHTS
---	---	SECTION CORNER
---	---	SEGMENTED CIRCLE LIGHTED WIND TREE
---	---	TOPOGRAPHIC CONTOURS
---	---	WIND INDICATOR (lighted)
---	---	POWER POLE
---	---	TAXIWAY DESIGNATION
---	---	DIRT ROADS
---	---	RUNWAY EDGE LIGHTING
---	---	PAVEMENT TO BE ABANDONED
---	---	SPECIAL USE PERMIT BOUNDARY
---	---	POTENTIAL NON-AVIATION DEVELOPMENT
---	---	FUTURE DETENTION SEDIMENTATION BASIN

RUNWAY DATA	RUNWAY 12-30	
	EXISTING	ULTIMATE
RUNWAY CATEGORY/AIRCRAFT DESIGN GROUP	B-II	SAME
RUNWAY DESIGN CATEGORY	B-II-5000	SAME
CRITICAL DESIGN AIRCRAFT	SUPER KING AIR B200	SAME
WINDSPEED OF DESIGN AIRCRAFT	54.5	SAME
APPROACH SPEED OF DESIGN AIRCRAFT (KNOTS)	103	SAME
MAXIMUM TAKE OFF WEIGHT (lbs)	12,500 (s) <sup>1</sup>	SAME
RUNWAY AZIMUTH	138.00/318.00	SAME
RUNWAY BEARING (TRUE)	N42°W	SAME
RUNWAY DIMENSIONS	5,000' X 150'	SAME
ELEVATION OF RWY TOUCH DOWN ZONE (MSL)	66.3/51.0	SAME
ELEVATION OF RUNWAY HIGH POINT (above MSL)	66.3	SAME
ELEVATION OF RUNWAY LOW POINT (above MSL)	32.5	SAME
WIND COVERAGE IN MPH	12.1-39.35%/15-39.76%	SAME
APPROACH VISIBILITY MINIMUMS	1 MILE/1 MILE	SAME
FAR PART 77 CATEGORY	NON-PREC/NON-PREC	SAME
RUNWAY INSTRUMENTATION	GPS/GPS	SAME
RUNWAY APPROACH SURFACES	20.1/20.1	SAME
RUNWAY THRESHOLD DISPLACEMENT	763/763	SAME
RUNWAY STOPWAY	NONE	NONE
RUNWAY SAFETY AREA WIDTH (RSA)	150'	SAME
RSA DISTANCE BEYOND EACH RUNWAY END	300/300'	SAME
RUNWAY OBJECT FREE AREA WIDTH (OFA)	500'	SAME
OFA DISTANCE BEYOND EACH RUNWAY END	300/300'	SAME
RUNWAY OBSTACLE FREE ZONE WIDTH (OFZ)	400'	SAME
OFZ DISTANCE BEYOND EACH RUNWAY END	200/200'	SAME
RUNWAY PROTECTION ZONE	500' x 1000' ±700'	SAME
LINE OF SITE REQUIREMENT	NO	SAME
RUNWAY PAVEMENT MATERIAL	ASPHALT	SAME
RUNWAY PAVEMENT SURFACE TREATMENT	NONE	SAME
PAVEMENT STRENGTH (in thousand lbs.)	30 (S) <sup>2</sup>	SAME
RUNWAY EFFECTIVE GRADIENT (in %)	0.007%	SAME
MAXIMUM GRADIENT (in %)	2%	SAME
RUNWAY LIGHTING	MIRL	SAME
RUNWAY MARKINGS	NON-PREC/NON-PREC	SAME
RUNWAY APPROACH LIGHTING	NONE	SAME
TAXIWAY DESIGN GROUP	2	SAME
TAXIWAY WIDTH	35'-50'	SAME
TAXIWAY SAFETY AREA	79'	SAME
TAXIWAY OFA	131'	SAME
TAXIWAY SEPARATION	105'	SAME
TAXIWAY TO FIXED OR MOVABLE OBJECT	65.5'	200'
TAXIWAY PAVEMENT MATERIAL	ASPHALT	SAME
TAXIWAY LIGHTING	MIRL	SAME
TAXIWAY MARKING	CENTERLINE, HOLDLINES	SAME
DISTANCE FROM RWY. CL TO HOLD BARS	175'	200'
VISUAL AIDS	PAPI-2/PAPI-2 REIL (30)	SAME SAME
NAVIGATIONAL AIDS	RNAV(GPS)/RNAV(GPS)	SAME

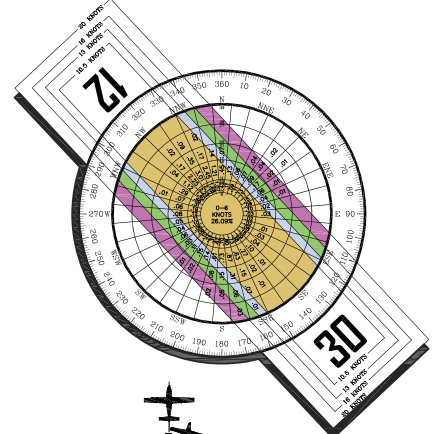
<sup>1</sup> Prior permission from Airport Manager if >12,500lbs. All ramps, taxiways, and tie-down areas rated at 12,500 lbs.  
<sup>2</sup> Pavement strengths are expressed in Single(S), Dual(D), Dual Tandem(DT), and/or Double Dual Tandem(DDT) wheel loading capacities.



BUILDINGS/FACILITIES			
EXISTING	ULTIMATE	DESCRIPTION	EL.
1	1	ADMINISTRATION TERMINAL BUILDING	67.2'
2	2	FIXED BASE OPERATION HANGAR (Half Moon Bay Area)	72.7'
3	3	FIXED BASE OPERATION HANGAR (West Coast Aviation Co.)	76.3'
4	4	T-HANGAR	62.8'/62.8'
5	5	CONVENTIONAL HANGAR	64.8'
6	6	COMMUNICATIONS TOWER	59.3'
7	7	FUEL STORAGE FACILITY (Above ground)	---
8	8	AUTO PARKING	---
9	9	TRANSIENT AIRCRAFT PARKING	---
10	10	AIRCRAFT WASH BAY	---
11	11	WELL SITES (U.S. GOVT. PROPERTY)	---

RUNWAY END COORDINATES (NAD 83)			
RUNWAY	Latitude	EXISTING/DISPLACED	ULTIMATE
RUNWAY 12	N37°31'00.000"	---	---
	Longitude	W122°30'19.0000"	SAME
RUNWAY 30	Latitude	N37°30'35.8201"	N37°30'30.3128"
	Longitude	W122°29'49.4611"	W122°29'43.8893"

- GENERAL NOTES:**
- Base Map and Contours derived from 2012 aerial photography and planimetric mapping, surveyed by Towl Inc.
  - Source for existing runway end/displaced threshold coordinates, runway end/displaced threshold elevations: ASIS Datasheet Systems at www.avwww.pcbj.org/datasheet.
  - All coordinates are NAD 83 and all elevations are NAVD 88.
  - Airport has been surveyed in accordance with FAA standard 18B.
  - Airport Property Line information provided by the San Mateo County (October 1999)
  - No threshold siting surface object penetrations.
  - Airport No OFZ object penetrations.
  - New security fencing and access gates will be installed at locations to be determined at a later date.
  - The Building Restriction Lines (BRL) are set for the ultimate runway conditions. The BRL encloses the runway protection zones, the runway object free area, the runway visibility zone, the runway object free area, the runway object free area, the runway object free area. The established BRL is an estimate of the minimum distance to the runway for an object for an object 15 feet in height. Prior to constructing any building or object on the airport, a F.A.R. Part 77 obstruction analysis should be conducted.



ALL WEATHER WIND COVERAGE				
Runways	10.5 Knots	13 Knots	16 Knots	20 Knots
Runway 12-30	97.34%	98.84%	99.66%	99.91%

AIRPORT DATA			
HALF MOON BAY AIRPORT (HAF)			
CITY: HALF MOON BAY COUNTY: SAN MATEO, CALIFORNIA			
RANGE: R 6W TOWNSHIP: T 5S CIVIL TOWNSHIP: N/A			
EXISTING		ULTIMATE	
AIRPORT SERVICE LEVEL	GENERAL AVIATION	SAME	SAME
AIRPORT REFERENCE CODE	B-II	SAME	SAME
AIRPORT ELEVATION	66.3' MSL	SAME	SAME
MEAN MAXIMUM TEMPERATURE OF HOTTEST MONTH	66.4°F (July)	SAME	SAME
AIRPORT REFERENCE POINT (ARP) COORDINATES (NAD 83)	Latitude	N37°30'48.0000"	SAME
	Longitude	W122°30'04.2000"	SAME
AIRPORT and TERMINAL NAVIGATIONAL AIDS	ROTATING BEACON	SAME	SAME
	AWOS III	SAME	SAME

No.	REVISIONS	DATE	BY	APP'D.
1	ALP Update/Narrative Report	02/21/2014	---	---
2	ALP Revalidation	02/04/2014	DKR	FAA
3	ALP Update	10/06/2008	AR	FAA

HALF MOON BAY AIRPORT  
 AIRPORT LAYOUT PLAN  
 HALF MOON BAY, CALIFORNIA  
 PLANNED BY: Steve Wagner  
 DETAILED BY: Maggie Bauer  
 APPROVED BY: James M. Harris  
 February 21, 2014 SHEET 1 OF 9