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Environmental Quality Division
Naval Facilities Engineering Command
Alexandria, Virginia

Hazardous Materials/Hazardous Waste Engineering Study

February 1984

Hazardous Materials/Wastes Generation Survey, Hazard Analysis and Storage Facility Design Recommendations
Marine Corps Air Station
El Toro, California

TITLE: HAZARDOUS MATERIALS/HAZARDOUS WASTE ENGINEERING STUDY

AUTHOR: ROY F. WESTON, INC.

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HAZARDOUS MATERIALS/HAZARDOUS WASTE ENGINEERING STUDY

HAZARDOUS MATERIALS/WASTE GENERATION SURVEY, HAZARD ANALYSIS AND STORAGE FACILITY DESIGN RECOMMENDATIONS

Prepared For:

ENVIRONMENTAL QUALITY DIVISION
NAVAL FACILITIES ENGINEERING COMMAND

February 1984

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EXECUTIVE SUMMARY

The Department of Defense (DoD) has mandated that the Defense Logistics Agency (DLA) support military services by disposing of all hazardous materials and hazardous wastes (HM/HW), except for various chemical warfare materials, classified items, and solid and domestic wastes, through their regional Defense Property Disposal Offices (DPDO). This study addresses HM/HW handling and disposal in the Los Angeles area. The regional DPDO is located at the El Toro Marine Corps Air Station in El Toro, California. The military installations served by this DPDO include the El Toro MCAS, the Tustin Marine Corps Air Station (Helicopter) (MCAS(Helicopter)), the Long Beach Naval Shipyard (NSY), the Seal Beach Naval Weapons Station (NWS), the Los Alamitos Naval Air Station, and the U. S. Army Fort McArthur. These military installations are responsible for proper collection, packaging, and identification of the HM/HW prior to turn-in to the regional DPDO.

The Navy and DLA have jointly funded an engineering study to evaluate the HM/HW handling and storage capabilities and needs in the Los Angeles area. In order to meet the objectives of this study, WESTON conducted a site visit in July 1983 to collect HM/HW generation information and to inspect existing and potential storage locations. Following this visit, a HM/HW inventory was generated that listed all of the HM/HW currently handled by the El Toro DPDO and the military installations in the area served by the El Toro DPDO. Potential hazards posed by these HM/HW were listed in this inventory and HM/HW compatibility groups were established.

With this information, each existing storage facility was evaluated in order to determine which was "most conforming" (based on DLA, Navy, Federal, and state criteria, including facility size and construction, storage area design and safety, and emergency response capability). It was determined that the El Toro DPDO storage lot 1 was the most conforming facility. Recommended short-term upgrading for lot 1 included the following:

- Construction of waste segregation and runon/runoff controls.
- Application of a storage area surface seal.

- Construction of a fence to segregate this area from the rest of lot 1.

- Construction of a storage shed for the required safety and emergency response equipment.

The total cost of this upgrading would be $27,000.

HM/HW facilities at Tustin and the El Toro MCAS were determined to be adequate for accumulation of small quantities of HM/HW prior to transfer to the DPDO lot 1 or off-site disposal facilities. Seal Beach is in the process of constructing new HM/HW storage facilities. Until these new facilities are available, HM/HW should be immediately transferred to the El Toro DPDO lot 1 or an off-site disposal facility. The Long Beach Naval Shipyard storage facility was determined to be conforming for short-term storage of HM/HW generated at the Shipyard. The Los Alamitos Naval Air Station and the U.S. Army Fort McArthur currently do not generate any significant quantities of HM/HW.

Alternatives for long-term storage of HM/HW generated were evaluated in the same manner. As a result of this evaluation it was recommended that a new joint-use (El Toro DPDO and MCAS) facility be constructed in another section of the El Toro DPDO lot 1. No other location is currently available at the El Toro MCAS and the lot 1 location is of sufficient size and would not conflict with the Base master plan.

The proposed facility is a 17,200 square foot, steel-framed masonry building, which, when equipped with operations and safety and emergency response equipment, has an estimated cost of $1.5 million. Safety operational procedures were developed for the proposed facility along with military construction documents (Form 1391) and a preliminary environmental assessment.

MCAS storage space is included in the proposed new facility in order to provide an indoor facility for HW repackaging, characterization, and long-term storage with waste segregation controls, and safety and emergency response equipment and personnel. In addition, office facilities and joint use shower and decontamination and laboratory facilities would be available.

Each of the other major military installations served by the El Toro DPDO has or is in the process of constructing interim indoor HM/HW storage facilities that meet DLA, Navy, Federal, and state regulations. It is recommended that major HW from these bases be hauled directly to disposal facilities.

SECTION 1

INTRODUCTION

1.1 PROJECT SUMMARY

WESTON has been retained by the U.S. Navy and the Defense Logistics Agency (DLA) to perform a Hazardous Materials/Hazardous Waste Engineering Study for the El Toro Marine Corps Air Station (MCAS) located in El Toro, California. This installation, along with other nearby military activities, uses large volumes of hazardous materials in various operations that produce a wide variety of excess hazardous materials (HM) and hazardous wastes (HW). The Department of Defense (DoD) has required the DLA to support the military services in disposing of all HM/HW streams, with the exception of eight categories (listed in Table 1.1). Proper collection, packaging, and identification of the HM/HW must be carried out by the military branches prior to transfer of these materials to the DLA's area Defense Property Disposal Office (DPDO).

The elements of the HM/HW Engineering Study to be performed by WESTON are as follows:

- Task 1 -- Verify current and projected generation rates of hazardous wastes and excess hazardous materials.
- Task 2 -- Determine compatibility groupings of the specific materials generated and the hazards associated with the groupings, accidental mixing of incompatible materials, and the materials themselves, and abatement measures for these hazards.
- Task 3 -- Recommend short-term storage responsibilities based on Navy and DLA criteria for conforming storage, and identify short-term facility changes that could be implemented to improve compliance with these criteria.
- Task 4 -- Recommend long-term storage alternatives to meet the facility needs.
- Task 5 -- Prepare programming documents and operational procedures for the alternative(s) selected by Naval Facilities (NAVFAC)/DLA.

Table 1.1

Navy Disposal Responsibility
El Toro Marine Corps Air Station

Waste Category	Generation Yes	No
Toxicological/biological/radiological/ Chemical warfare		X
Materials with disposal regulated by military, e.g., classified items		X
Municipal treatment plant sludge		X[1]
Industrial wastewater treatment plant Sludge		X[1]
Municipal/domestic refuse and trash	X[2]	
Contractor wastes	X[3]	
Research and development		X
Construction debris	X[3]	

[1]Municipal and industrial wastewater is treated at an offsite municipal treatment plant.

[2]Removed off-site as generated -- no storage capacity required.

[3]Contractors working onsite are required by contractual terms to dispose of any wastes from materials they bring onsite.

1.2 SITE VISIT

WESTON conducted a site visit at the El Toro MCAS in El Toro, California on 19-21 July 1983. A site kickoff meeting was held to present the scope and objectives of the WESTON study. At this meeting it was explained that NAVFAC would like to locate a new DPDO in the Los Angeles area to handle HM/HW from local activities. Local military activities to be included in this study are as follows:

- El Toro MCAS.
- Tustin Marine Corps Air Station (Helicopter) (MCAS (Helicopter)).
- Long Beach Naval Shipyard (NSY).
- Long Beach Naval Station (NAV STA).
- Long Beach Naval Medical Center (NMC).
- Long Beach Naval Supply Center (NSC).
- Seal Beach Naval Weapons Station (NWS).
- Naval Air Station at Los Alamitos.
- U.S. Army Fort McArthur.

The area DPDO is presently located at El Toro and consists of the following:

- DPDO warehouse -- Building 319.
- Storage lot 1.
- Storage lot 2.

The El Toro DPDO is not accepting HW at this time because the storage facilities are inadequate. It was learned during the site visit that storage lot 2 of the El Toro DPDO is to be repossessed by the base in the near future in accordance with the base master plan. Currently, there are no other available locations at El Toro for locating new DPDO facilities. A new HM/HW facility could be constructed on storage lot 1, however, this would further diminish the available DPDO storage space.

The Tustin MCAS (Helicopter) has land available for establishing a DPDO storage area. In addition, a new supply storage facility is to be constructed at the Tustin site in the near future. Space could be designated at this new facility for storage of HM, or a separate DPDO HM/HW storage facility could be built at Tustin in this same general location. An advantage to locating the area DPDO HM/HW storage facility at Tustin is its central location in relation to all generating activities.

The Long Beach NSY currently has an HM/HW storage facility that they are in the process of upgrading to conforming storage facility status. HM/HW from all of the activities located in Long Beach are stored at this facility. The site of the existing storage facility is slated for other use in the Long Beach NSY's master plan and a new HM/HW storage facility will have to be constructed at another location at the Shipyard by 1986. Currently, the NSY is handling the responsibility for disposal of HW generated. In the future, El Toro DPDO will be responsible for disposal of HM generated at the Long Beach NSY. HM generated at the NSY are transported to the El Toro DPDO for sale or disposal.

The Seal Beach NWS currently has a number of areas where HW are stored. Currently, this facility is handling the disposal of these wastes, but in the future the DPDO will have disposal responsibility. HM are sent to the El Toro DPDO for sale or disposal. Plans have been drafted for upgrading an existing building at the base to serve as the HM/HW storage facility. Completion of this new facility is scheduled for April 1984.

The Los Alamitos Naval Air Station does not currently generate any HW, however, small quantities of HM are sent to the El Toro DPDO. The U.S. Army Fort McArthur is virtually shut down and only small quantities of HM are sent to the El Toro DPDO for sale and disposal.

SECTION 2

TASK 1: VERIFICATION OF WASTE GENERATION RATES

2.1 METHODOLOGY

Task 1 of this engineering study was designed to establish the types and quantities of excess hazardous materials (HM) and hazardous wastes (HW) being generated at the El Toro, Long Beach, Seal Beach, Tustin, and other activities in southern California.

HM/HW generation data from several sources were reviewed in this task. These sources included the following:

- Wing Safety Monthly reports for the El Toro and Tustin facilities, which list HM/HW quantities disposed of through the DPDO and stored locally as waste during the months of April and June 1983.
- El Toro DPDO HM/HW Inventory for 1981.
- Seal Beach Naval Weapons Station 1982 generation report.
- Long Beach Naval Shipyard 1982 HW Annual Report.
- February 1982 HW Management Study for Various Activities in Southern California and Arizona.
- July 1980 Long Beach Naval Shipyard Toxic and Hazardous Waste Procedures Survey.

2.2 HAZARDOUS MATERIALS/HAZARDOUS WASTE INVENTORY

Data on the excess hazardous materials and hazardous waste streams generated at the individual activities are given in Tables 2.1 to 2.4. The HM and HW handled by the El Toro DPDO are listed in Table 2.5. The amounts of waste generated by the El Toro MCAS and Tustin MCAS (Helicopter) should decrease in the future because of the recent initiation of housecleaning activities and disposal of one-time wastes in preparation for moving all storage to the new facilities currently under construction. This trend will not affect the quantities reported in Table 2.1 to 2.4 because only those wastes presently being generated have been reported.

Table 2.1

Aggregate Annual Hazardous Waste Generation Rates
El Toro MCAS

Waste Stream	Annual Volume Generated[1] (gal)	Container Type	Potential Hazard[2]
Polyurethane paint	330	5 gallon drum 25 gallon drum[3] 55 gallon drum	Ignitable
Paint thinner	210	5 gallon drum 25 gallon drum 55 gallon drum	Ignitable
Dry cleaning solvent	1,900	5 gallon drum 25 gallon drum 55 gallon drum	Ignitable
Engine oil	2,200	5 gallon drum 25 gallon drum 55 gallon drum	Ignitable
Hydraulic fluid	7,100	5 gallon drum 25 gallon drum 55 gallon drum	Ignitable
Lubricating oil	34,000	5 gallon drum 25 gallon drum 55 gallon drum	Ignitable
Brake fluid	16,000	5 gallon drum 25 gallon drum 55 gallon drum	Ignitable
Degreaser	210	5 gallon drum 25 gallon drum 55 gallon drum	Ignitable
Fuel (JP-5)	7,800	5 gallon drum 25 gallon drum 55 gallon drum	Ignitable

Table 2.1
(continued)

Waste Stream	Annual Volume Generated[1] (gal)	Container Type	Potential Hazard[2]
Transmission fluid	360	5 gallon drum 25 gallon drum[3] 55 gallon drum	Ignitable
Diesel fuel	2,200	5 gallon drum 25 gallon drum 55 gallon drum	Ignitable
Cleaning solvent	330	5 gallon drum 25 gallon drum 55 gallon drum	Ignitable
Acetylene	600 cu ft	Cylinder	Ignitable
Trichlorotrifluoroethane	750	5 gallon drum 25 gallon drum 55 gallon drum	Toxic
Anti-freeze	900	5 gallon drum 25 gallon drum 55 gallon drum	Toxic
Battery acid sulfuric acid	930	5 gallon drum 25 gallon drum 55 gallon drum	Corrosive

[1]Based on extrapolation of 2 months of generation records.
[2]Industrial wastes have been included in this list. Since they have not been tested, a conservative RCRA hazard category has been assigned.
[3]Will be used in the future to consolidate small waste quantities.

Table 2.2

Aggregate Annual Hazardous Waste Generation Rates
Tustin MCAS (Helicopter)

Waste Stream	Annual Volume Generated[1] (gal)	Container Type	Potential Hazard[2]
Corrosion preventative	6	5 gallon drum	Ignitable
Fuel (JP-5)	19,700	5 gallon drum 25 gallon drum[3] 55 gallon drum	Ignitable
Hydraulic fluid	7,100	5 gallon drum 25 gallon drum 55 gallon drum	Ignitable
Paint remover	30	5 gallon drum 25 gallon drum	Ignitable
Toluene, xylene	20	5 gallon drum 25 gallon drum	Ignitable, toxic
Polyurethane paint	6	5 gallon drum	Ignitable
Primer	6	5 gallon drum	Ignitable
Engine oil	1,600	5 gallon drum 25 gallon drum 55 gallon drum	Ignitable

Table 2.2
(continued)

Waste Stream	Annual Volume Generated[1] (gal)	Container Type	Potential Hazard[2]
Lubricating oil	14,800	5 gallon drum 25 gallon drum[3] 55 gallon drum	Ignitable
Dry cleaning solvent	570	5 gallon drum 25 gallon drum 55 gallon drum	Ignitable
Brake fluid	510	5 gallon drum 25 gallon drum 55 gallon drum	Ignitable
Transmission fluid	60	5 gallon drum 25 gallon drum 55 gallon drum	Ignitable
Solvent (methylethyl ketone)	40	5 gallon drum 25 gallon drum	Ignitable, toxic
Anti-freeze	240	5 gallon drum 25 gallon drum 55 gallon drum	Toxic
Trichlorotrifluoroethane	50	5 gallon drum 25 gallon drum	Toxic
Battery acid sulfuric acid	930	5 gallon drum 25 gallon drum 55 gallon drum	Corrosive

[1]Based on extrapolation of 2 months of generation records.
[2]Industrial wastes have been included in this list. Since they have not been tested, a conservative RCRA hazard category has been assigned.
[3]Will be used in the future to consolidate small waste quantities.

Table 2.3

Aggregate Annual Hazardous Waste Generation Rates
Long Beach Naval Shipyard

Waste Stream	Annual Volume Generated (gal)	Container Type	Potential Hazard[1]
Acetone	110	55 gallon drum	Ignitable, toxic
Paint sludge	24,500	55 gallon drum 25 gallon drum	Ignitable
Flammable liquid N.O.S.	110	55 gallon drum	Ignitable
Oil sludge	440	55 gallon drum 25 gallon drum	Ignitable
Pyridine	110	55 gallon drum	Ignitable
Hydraulic oil	8,110	55 gallon drum	Ignitable
Fuel oil waste	110	55 gallon drum	Ignitable
Kerosene	510	55 gallon drum 25 gallon drum	Ignitable
Chemical cleaning compound	715	55 gallon drum	Ignitable
Halogenated solvents	110	55 gallon drum 25 gallon drum	Ignitable, toxic
Waste oil	110	55 gallon drum	Ignitable
Ketone	165	55 gallon drum	Ignitable, toxic
Cresol	110	55 gallon drum	Ignitable, corrosive

Table 2.3
(continued)

Waste Stream	Annual Volume Generated (gal)	Container Type	Potential Hazard[1]
Noplitha	110	55 gallon drum 25 gallon drum	Ignitable
Waste naptha (coal tar)	220	55 gallon drum 25 gallon drum	Ignitable, toxic
Oil - paint	7,000	55 gallon drum 25 gallon drum	Ignitable
Fuel oil and absorbent	660	55 gallon drum 25 gallon drum	Ignitable
Sodium phosphate	220	55 gallon drum	Toxic
Freon	165	55 gallon drum	Toxic
Organic phosphate	110	55 gallon drum	Toxic
Mercuric nitrate	220	55 gallon drum	Toxic
1,1,1-trichloroethane	1,550	55 gallon drum 25 gallon drum	Toxic
Mercury waste	220	55 gallon drum 25 gallon drum	Toxic
Ethylene glycol	260	55 gallon drum	Toxic
Lead cyanide	110	55 gallon drum 25 gallon drum	Toxic
Acid sludge	110	55 gallon drum	Corrosive
Alkaline solution	440	55 gallon drum 25 gallon drum	Corrosive

Table 2.3
(continued)

Waste Stream	Annual Volume Generated (gal)	Container Type	Potential Hazard[1]
Soda lime	220	55 gallon drum 25 gallon drum	Corrosive
Sodium hydroxide (caustic soda)	440	55 gallon drum 25 gallon drum	Corrosive
Hydrochloric acid	110	55 gallon drum 25 gallon drum	Corrosive
Phosphoric acid	110	55 gallon drum 25 gallon drum	Corrosive
Sulfuric acid	110	55 gallon drum 25 gallon drum	Corrosive
Water treatment compound	220	55 gallon drum	Corrosive

[1]Industrial wastes have been included in this list. Since they have not been tested, a conservative RCRA hazard category has been assigned.

Table 2.4

Aggregate Annual Hazardous Waste Generation Rates
Seal Beach Naval Weapons Station

Waste Stream	Annual Volume Generated (gal)	Container Type	Potential Hazard[1]
1,1,1-trichloroethane	300	Original container	Toxic
Freon	200	Original container	Toxic
Pesticides	25	Original container	Toxic
Paint	110	Original container	Toxic, ignitable
Lacquer thinner	1,380	Original container	Toxic, ignitable
Waste oil	4,980	55 gallon drum	Ignitable
Cutting oil	220	55 gallon drum	Ignitable
Battery acid	250	Polyethylene container	Corrosive
Batteries	2,700 lb	Pallet	Corrosive

[1]Industrial wastes have been included in this list. Since they have not been tested, a conservative RCRA hazard category has been assigned.

Table 2.5

Aggregate Annual Hazardous Waste Generation Rates
DPDO El Toro

Waste Stream	Annual Volume Generated (gal)	Container Type	Potential Hazard[1]
Paint remover	170	5 gallon can	Corrosive
Nitric acid	1,470	6.5 gallon container	Corrosive
Sulfuric acid electrolyte	200	5 gallon drum	Corrosive
Potassium hydroxide	210	6 quart bottle	Corrosive
Miscellaneous corrosives	640	---	Corrosive
Sodium silicate solution	750	5 gallon can	Toxic
Cleaning compound	1,940	55 gallon drum	Toxic
Miscellaneous toxics	1,520	---	Toxic
Lacquer	2,620	5, 1 gallon can 1 quart, 1 pint can	Ignitable (IA)
Primer coating	420	1 gallon can 2 pint can	Ignitable (IA)
Polyurethane coating	410	2 gallon, 2 quart, 2 pint can	Ignitable (IA)
Miscellaneous ignitables (IA)	410	---	Ignitable (IA)
Fuel	8	1 pint can	Ignitable (IB)
Naptha alphamatic	210	5 gallon can	Ignitable (IC)

Table 2.5
(continued)

Waste Stream	Annual Volume Generated (gal)	Container Type	Potential Hazard[1]
1,1,1-trichloroethane	280	5 gallon can	Ignitable (IC)
Dry cleaning solvent	910	5 gallon can	Ignitable (IC)
Miscellaneous ignitable (IC)	270	---	Ignitable (IC)
Enamel	900	1 pint can	Ignitable (II)
Dry cleaning solvent	900	1 quart can	Ignitable (II)
Miscellaneous ignitables (II)	880	---	Ignitable (II)
Lube oil	44,900	5 gallon can	Ignitable (III)
Hydraulic fluid	22,440	1 gallon can	Ignitable (III)
Grease	7,480	1 lb. can	Ignitable (III)
Adhesive	3,740	1 pint can	Ignitable (III)
Sealing compound	3,740	1 quart can	Ignitable (III)

Table 2.5
(continued)

Waste Stream	Annual Volume Generated (gal)	Container Type	Potential Hazard[1]
Miscellaneous ignitables (III)	9,590	---	Ignitable (III)
Corrosion preventative compound	11,200	1 pint can 5 gallon can	Oxidizer
Miscellaneous oxidizers	870	---	Oxidizer

[1]Industrial wastes have been included in this list. Since they have not been tested, a conservative RCRA hazard category has been assigned.

The majority of wastes generated at the Long Beach activity are bulk wastes (bilge wastes, waste oils) that have not been tested because they are not to be considered in this study. The Long Beach Naval Shipyard also generates large quantities of containerized paint, petroleum, acid, and caustic waste, which is typical of a repair and refit activity.

Seal Beach generates small quantities of HW/HM. The quantities reported are probably high because of housecleaning activities and the disposal of one-time wastes.

Large volumes of excess hazardous materials and smaller quantities of hazardous wastes are handled at the El Toro DPDO. These large volumes create storage and safety problems for the DPDO. This problem is compounded by the fact that processing or disposal or sale of these materials typically takes 6 to 9 months. It is not expected that the current generation volumes will change in the future.

SECTION 3

TASK 2: PRELIMINARY HAZARD ANALYSIS

3.1 MARINE CORPS AIR STATION STORAGE AND DISPOSAL RESPONSIBILITY

According to the requirements of DEQPPM80-5, the Defense Logistics Agency (DLA) is assigned responsibility for the storage and disposal of all hazardous materials generated by Department of Defense (DoD) installations, except those in eight specific categories. These categories were summarized in Table 1.1. This table indicates whether these waste streams are found at El Toro, and if so, the method of disposition.

Municipal and industrial wastewaters are discharged through the base sewer system to the Orange County treatment plant. Municipal/domestic refuse and trash are removed from the base as it is generated.

Contractors working onsite are required by contractual terms to dispose of any wastes from materials they bring onsite themselves. When contractors make use of the station's materials, disposal of the waste is through normal Navy channels.

3.2 DPDO STORAGE AND DISPOSAL RESPONSIBILITY

The DPDO at El Toro is responsible for storage and disposal of all excess hazardous material and hazardous waste streams for the El Toro MCAS; the Tustin MCAS (Helicopter); the Long Beach Naval Shipyard (LBNSY), Naval Station (NAVSTA), Naval Medical Center, and Naval Supply Center (NSC); the Seal Beach NWS, the U.S. Army Fort McArthur, and the Los Alamitos Naval Air Station, besides the eight waste streams listed in Table 1.1. The Los Alamitos Naval Air Station currently does not generate any HW; however, small quantities of HM are sent to the El Toro DPDO. Fort McArthur is virtually shut down and only small quantities of HM are sent to the El Toro DPDO for disposition. The Naval Medical Center at Long Beach does not generate significant quantities of HW/HM.

Currently, the El Toro DPDO handles excess hazardous materials from all of the generation activities and hazardous wastes from the El Toro and Tustin activities. Both the El Toro MCAS and Tustin MCAS (Helicopter) are in the process of constructing new HW storage facilities. Once they are completed they will have more conforming storage than the DPDO. At that time, the DPDO plans to obtain disposal contracts for removal of HW directly from these storage facilities.

The Seal Beach and Long Beach activities presently have contracts with local firms for disposal of all of their HW. Long Beach is in the process of upgrading its existing storage facility for short-term use. This facility will be phased out in the near future (2 to 3 years), and a new facility will be constructed. Seal Beach has recently awarded a contract for upgrading an existing building for use as their HW storage facility. Because of the relatively long distances separating these activities from the El Toro DPDO and the fact that the generating activity must pay for transporting HW to the DPDO, it is expected that disposal will continue to be direct from the generating activity with only the paperwork being handled by the DPDO. In addition, once the facilities at these activities are upgraded, they will have more conforming storage than the DPDO.

The excess HM and HW streams for which the DPDO has disposal responsibility are identified, along with their potential hazards, in Table 3.1. Even those wastes that are disposed of directly from the generating activity with only the paperwork being handled by the DPDO are listed. It is not now known whether these wastes may be transferred to the El Toro DPDO in the future if a new facility is constructed, and for this reason they have been included in the total list. Table 3.2 consolidates the waste types listed in Table 3.1 into four HM/HW categories for storage compatibility.

3.3 HAZARD ANALYSIS/STORAGE COMPATIBILITY

3.3.1 Potential Hazard Classifications

There are four general characteristics that result in materials and wastes being designated as hazardous, as defined by RCRA (40 CFR 261): ignitability, corrosivity, reactivity, and toxicity. Hazardous materials and wastes possess one or more of these

Table 3.1

DPDO Disposal Responsibility
Waste Streams by Category

Waste Type	Potential Hazard[1]
Waste oil and fuel	Ignitable
Solvents	Ignitable
Paint thinner and remover	Ignitable, corrosive
Paint and paint sludges	Ignitable, toxic
Acetylene	Ignitable
Acetone	Ignitable, toxic
Pyridine	Ignitable
Kerosene	Ignitable
Ketone	Ignitable
Cresol	Ignitable, corrosive
Waste naptha	Ignitable, toxic
Lacquer	Ignitable, toxic
Adhesives and sealing compounds	Ignitable
Anti-freeze (ethylene glycol)	Toxic
Trichlorotrifluoroethane	Toxic
Freon	Toxic
1,1,1-trichloroethane	Toxic
Mercury wastes	Toxic
Lead cyanide	Toxic
Pesticides	Toxic
Sodium silicate solution	Toxic, corrosive
Acids and acid sludges	Corrosive
Caustics	Corrosive
Batteries	Corrosive
Corrosion preventative	Oxidizer
Empty drums and cans	Ignitable, corrosive, toxic, oxidizer

[1]Industrial wastes have been included in this list. Since they have not been tested, a conservative RCRA hazard category has been assigned.

Table 3.2

Compatible Material/Waste Categories
El Toro DPDO

1. Inorganic Acids
   - Battery acids
2. Strong Oxidizing Agents and Caustics
   - Caustics
   - Corrosion preventative
3. Toxics
   - Mercury wastes
   - Lead cyanide
4. Miscellaneous Flammable Solvents and Organics
   - Waste oils and fuels
   - Waste solvents
   - Freon
   - Ketones
   - Paint and paint sludges

characteristics as an intrinsic chemical property. Hazards that might arise from these characteristics include the following:

- Fire.
- Explosions or violent reactions (resulting from fires).
- Corrosion of containers and equipment.
- Burns to human skin.
- Toxic effects on humans, wildlife, and plants from exposure to toxic agents through inhalation, ingestion, or adsorption.

Hazard classifications for the identified HM/HW requiring storage at El Toro and DPDO generation facilities are listed in Tables 2.1, 2.2, 2.3, 2.4, and 2.5.

3.3.2 Storage Compatibility

A second cause of hazards involved in the storage of these materials and wastes is mixing and reaction of incompatible materials. A summary of the potential reactions among the four material compatibility categories is shown in Table 3.3. Wastes of any one given classification are generally compatible with other wastes within the same classification. The following are consequences of accidental mixing of incompatible categories:

- Fire from extremely exothermic reactions, ignition of reaction mixtures, or reaction production.
- Generation of innocuous and nonflammable gas (resulting in possible pressure buildup).
- Generation of flammable gases.
- Generation of toxic gases.
- Heat generation by chemical reaction.
- Solubilization of toxic substances.

The listed hazards are, for some interactions, secondary consequences arising from the initial reaction result. For example, interaction of inorganic acids with strong oxidizing agents or caustics can result in heat generation which can, in turn, lead

Table 3.3

Potential Reactions to Mixtures
of Incompatible Categories

Category	Category 1	Category 2	Category 3	Category 4
Inorganic acids	---	H, E	GT, GF, S	H, F, GT
Strong oxidizing agents and caustics	H, E	---	H, E, GT G, S	H, GF, F, G, E, GT
Toxics	GT, GF, S	S, H, E, GT, G	---	H
Miscellaneous flammable solvents and organics	H, F, GT	H, GF, F, G, E, GT	H	---

Key

E = Explosion
F = Fire
G = Innocuous and nonflammable gas generation
GF = Flammable gas generation
GT = Toxic gas generation
H = Heat generation
S = Solubilization of toxic substances

to fire and, ultimately, an explosion. It is important to note that the assessment of hazards and interaction consequences is conservative since severity is dependent on the specific chemicals and categories involved and their relative concentrations. The condition of dilute solutions of inorganic acids and strong oxidizing agents or caustics may result in only a slight increase in temperature, easily absorbed by the surroundings. It was deemed prudent to evaluate potential hazards on the basis of concentrated materials.

3.4 HAZARD ABATEMENT SOLUTIONS

A primary element in abating the hazards discussed in the preceding subsection is prevention of accidental mixing and interaction through segregation of incompatible materials. Segregation in this instance involves establishing physical barriers between storage cells containing these materials, such as dikes or partial or complete walls.

Segregation of these materials in accordance with Table 3.3 will serve to minimize the potential for reactions resulting in fires, explosions, flammable gas generation, and toxic gas generation, the most serious of the potential consequences, as well as heat generation, innocuous gas generation, and solubilization of toxic substances (metals).

Pursuant to the Resource Conservation and Recovery Act (40 CFR 264), OSHA (29 CFR 1910), and Department of Defense (DoD) Chemical and Flammable Storage Facility Design Standards, hazard abatement measures require proper facility design and equipment including items such as the following:

- Building with physically separated storage areas for segregation of incompatible materials (40 CFR 264.17, 40 CFR 264.177(c)).
- Heat- or smoke-activated and manual fire alarm systems sounding at the base fire station, as well as at the storage facility (40 CFR 264.32(a)).
- Heat- and manually-activated fire suppression systems, such as those using foam, inert gas, or dry chemicals (40 CFR 264.32(c)).
- ABC-type fire extinguishers for controlling limited fires and assisting trapped personnel (40 CFR 264.32(c)).

- Explosive gases detection and alarm system designed for continuous monitoring (40 CFR 264.17).
- Explosion venting and/or blow-out walls (DM-5.13, pg. 5.13-6).
- Explosion-proof fixtures, lighting, and equipment motors (e.g., pumps, forklifts) (40 CFR 264.17).
- Emergency communications system -- telephones and/or radios (40 CFR 264.32(b)).
- Nonsparking tools (40 CFR 264.17).
- Proper ventilation to prevent buildup of flammable or toxic gases (DoD 4145.19-R-15-404(h)(4)).
- Container grounding equipment to prevent ignition by static electricity (40 CFR 264.17).
- Temperature control equipment to prevent spontaneous ignition of low flash point materials, and to control volatilization of flammable liquids (40 CFR 264.17).
- Adequate spill containment in the storage areas for at least 10 percent of the stored volume or the total volume of the largest container (40 CFR 264.175(a)(3)).
- Chemical spill control equipment including sorbent materials, neutralizing chemicals, and cleanup tools (40 CFR 264.32(c)).
- Chemical pumps for transfer of materials from damaged or leaking drums (40 CFR 264.171).
- Recovery drums for containerization and disposal of damaged containers (40 CFR 264.171).
- Access control measures such as fences and entrances with locks (40 CFR 264.16(b)(2)).
- Posted hazardous waste warning signs (40 CFR 264.14).

Hazard abatement measures require proper operating procedures including items such as:

- System for accurately tracking and verifying the identity of excess materials or wastes for segregation purposes, including analysis where required (40 CFR 264.73, 264.17, 264.13).
- Routine inspections for leaking or spilled materials and fire hazards, and maintaining adequate aisle space to perform such inspections (40 CFR 264.15, 264.35).
- Keeping all containers tightly closed when not transferring materials in or out (40 CFR 264.173(a)).
- Routine testing of emergency communication and alarm systems (40 CFR 264.33).
- Inspection and testing of emergency response equipment (40 CFR 264.33).
- Cleanup of all leaked or spilled materials immediately on discovery, or activate contingency plan, if necessary (40 CFR 264.15(c)).
- Immediate remedial action when fire or explosion hazards are discovered (i.e., contingency plan) (40 CFR 264.15(c)).
- Adequate training of personnel to provide for safe and environmentally-sound operations consistent with regulatory requirements, with periodic reviews and updates (40 CFR 264.16).
- Prepare emergency response plan with training for designated response teams (i.e., fire brigade) (40 CFR 264.51, 264.52, 264.16).
- Evacuation plan (40 CFR 264.52(f)).

Safety of personnel working in the storage facility is a major concern and such measures as the following are required to abate potential safety hazards:

- Chemical resistant clothing (DoD 4145.19-R-15-406(a)(4), 29 CFR 1910.132).

- Steel-toed rubber boots (DoD 4145.19-R-15-406(a)(4), 29 CFR 1910.136).
- Rubber gloves (DoD 4145.19-R-15-406(a)(4), 29 CFR 1910.132).
- Hardhats (29 CFR 1910.135).
- Goggles or other eye protection from projectiles and splashing (29 CFR 1910.133).
- Respirators and cartridges suitable for organic vapor, acid mist, and ammonia atmospheres (29 CFR 1910.134).
- Emergency showers (DoD 4145.19-R-15-406(a)(4)).
- Eyewash stations (DoD 4145.19-R-15-406(a)(4)).
- Shower and/or decontamination facilities (DM-5.13, pg. 5.13-8, 29 CFR 1910.141(c)).

The following safety features are also recommended by WESTON:

- Emergency fire blankets.
- Escape pack for oxygen-deficient atmosphere.
- Established personal hygiene rules and protocols governing no smoking, eating, or drinking in the facility, and cleaning hands and face prior to engaging in these activities.
- No fewer than two workers allowed in the facility at any given time (e.g., buddy system).

Emergency response teams should have the appropriate equipment and training to respond to the type of hazards that may be encountered (i.e., chemical fires, toxic vapors).

SECTION 4

TASK 3: SHORT-TERM STORAGE RECOMMENDATIONS

4.1 INTRODUCTION

The objective of Task 3 was to develop recommendations for short-term storage responsibility for HM/HW that are under the accountability of DLA. Each of the existing HM/HW storage facilities were evaluated based on DLA criteria for "conforming storage" as described in document DEQPPM80-5. At present, the El Toro DPDO will not accept any HW because of the nonconforming status of their existing facilities. The most nearly conforming storage facility was identified based on the results of Tasks 1 and 2, Navy HM/HW disposal guidance, the DLA conforming storage checklist, and the WESTON area inspection checklists. Recommendations for facility upgrades and operational changes were developed, together with cost estimates, for immediate implementation at the facility identified.

On 19-21 July 1983, the existing HM/HW storage facilities at the major generation activities in the Los Angeles area were inspected. These facilities included one of the six new storage areas at El Toro, the El Toro DPDO warehouse (Building 319) and lots 1 and 2, the Tustin MCAS (Helicopter) HM/HW storage building, the Seal Beach NWS existing storage areas and Building 38 (to be upgraded in the near future to facilitate HM/HW storage), and the Long Beach NSY existing staging areas and HM/HW storage facility. In addition, the proposed new supply storage facility and potential DPDO location at Tustin MCAS (Helicopter) and the proposed future HM/HW storage facility location at Long Beach NSY were visited. Compliance with conforming storage requirements was evaluated using the area inspection checklist. A checklist for each existing facility can be found in Appendix A of this report.

4.2 EL TORO MCAS

4.2.1 Description

There are six new MCAS HW storage areas located throughout the El Toro site. They were designed to provide short-term storage (less than 90 days) for HW generated at this Base with HW being picked up by disposal contractors and transported offsite. Now that the DPDO is responsible for HW disposal, these facilities may be used for interim storage before the HW is physically transferred to the DPDO or the same disposal practice may be carried out with the DPDO handling the disposal contracts.

When WESTON visited the site in July 1983, these storage areas were under construction; they have since been completed. The locations of the six storage sites are shown on Figure 4.1. Each of the areas consists of a 12-foot by 16-foot 8-inch concrete pad with a 6 and one-quarter inch containment curb. Each area is covered by a metal deck roof located 9 feet 6 inches above the pad. The areas are secured by a fence with a lockable gate. None of the areas is located in a flood plain or near personnel living quarters. Storage area 2 is located within 50 feet of a populated industrial area. All of the storage areas are located within 70 feet of a road, and vehicle access at each location is good.

Spill response materials will not be on hand at the storage areas, however, they are available from the Public Works spill response van. The curbed area is sufficient to retain over 10 percent of the maximum stored volume or the total volume of the largest container. There are no physical barriers to separate the various waste types, however, 5 feet of aisle space will be maintained as much as possible. Drum stacking will be kept to a maximum of two high during crowded conditions. A fire extinguisher (ABC type) and emergency eyewash station will be located at each area, and warning signs (i.e., no smoking) will be posted. There are no lights or other electrical fixtures at these facilities.

There will be a designated coordinator (trained in chemical operations) for each area, and he will be responsible for keeping a record of materials/wastes stored and ensuring that they are properly labeled. He will also be responsible for inspecting the stored material and checking for leakage at least daily. He will be equipped with a two-way radio for emergency communication.

4.2.2 Conforming Storage Analysis

The area inspection checklist was completed for one of these areas during the site visit, since they vary only in location. This checklist is found in Appendix A. Evaluation of these storage areas revealed several deficiencies in the facility and available equipment. Primary among these deficiencies is the lack of physical separation controls for the individual waste categories. With the present situation, incompatible spill material could potentially mix, creating hazardous conditions (i.e., heat and gas generation, fire, or an explosion).

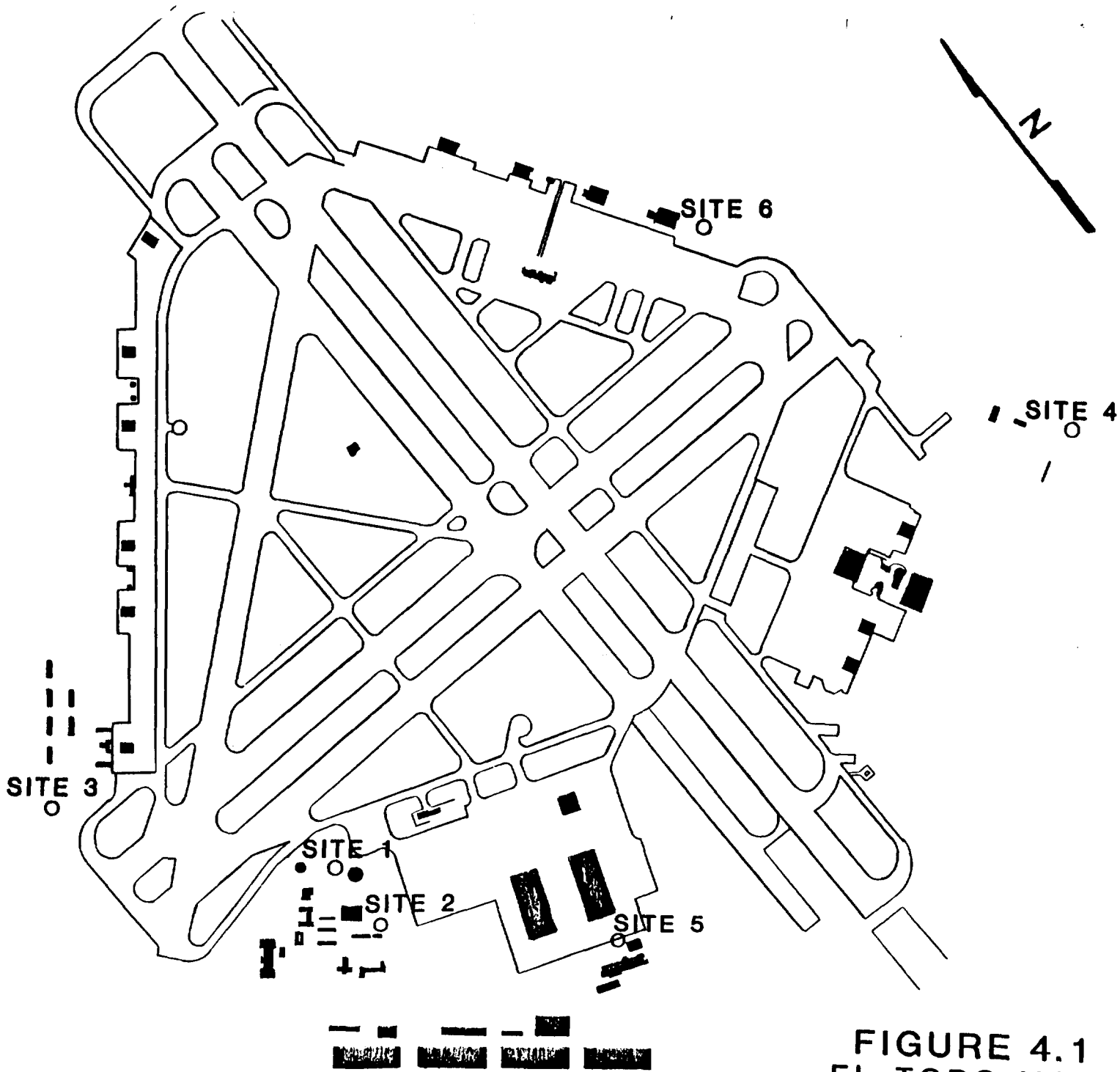


FIGURE 4.1
EL TORO MCAS
HW STORAGE AREAS

These storage areas are currently not equipped with safety showers, respiratory protective equipment, fire control equipment, or spill response equipment. These deficiencies result in potentially unsafe operations and storage not in accordance with regulatory requirements. In addition, the lack of telephone and alarm systems at the storage areas could reduce emergency response time.

One of the storage areas is located near a populated area, creating a potential exposure hazard. Use of these dispersed storage areas could create problems in inventory control and inspection capability.

4.2.3 Recommendations

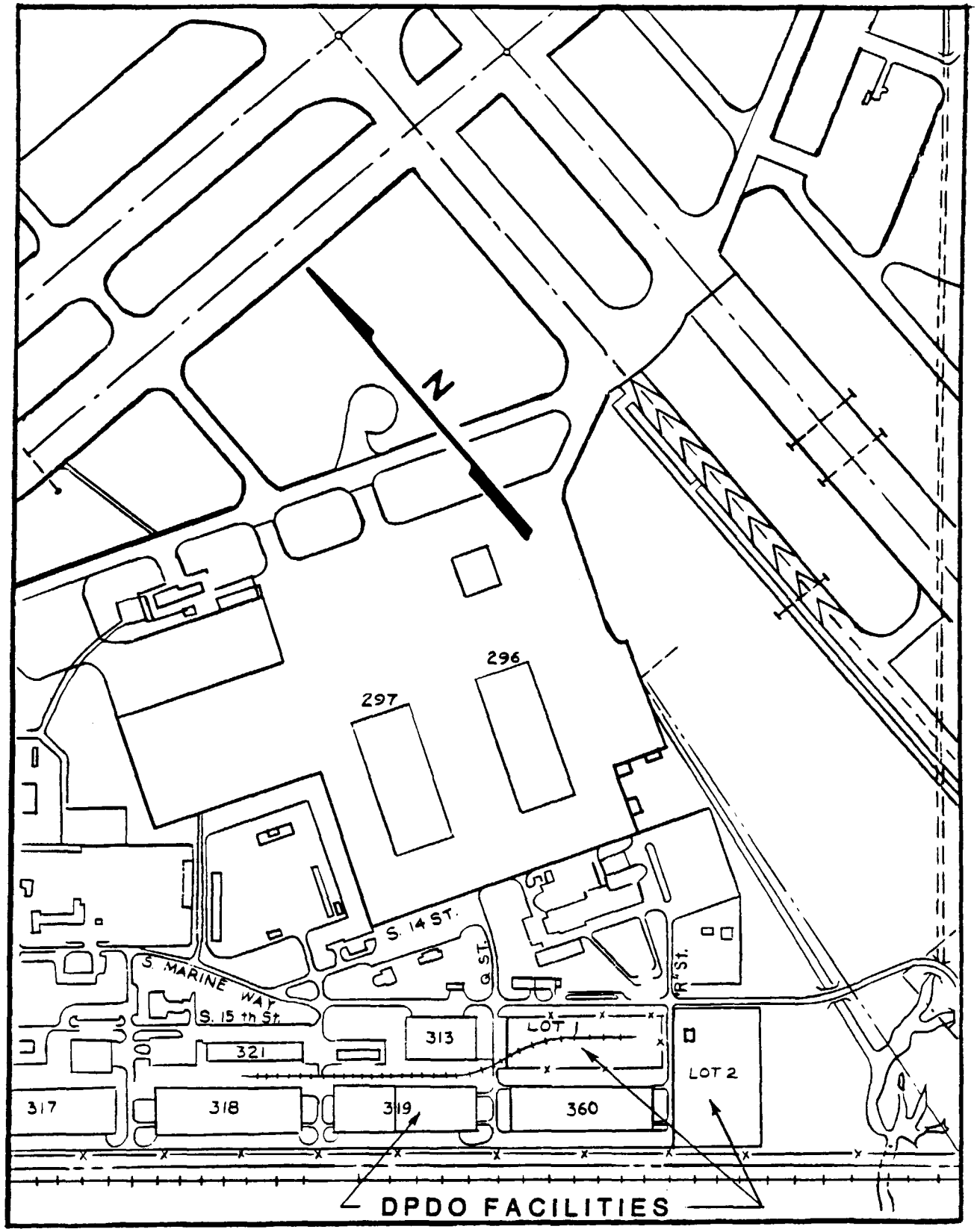
It is recommended that the El Toro MCAS storage areas not be designated for short-term use as DPDO storage facilities because of their dispersed location away from the DPDO. Inventory control would be hampered by this situation and DPDO personnel and equipment dispersion would create operational inefficiencies and increased costs. In addition, the DLA conforming storage checklist system for comparison of these facilities with the DPDO lot 1 facility was evaluated. The numerical rating developed from this evaluation for the MCAS storage areas was 8 as compared to a rating of 10 for DPDO lot 1. A copy of the DLA conforming storage checklist used is attached in Appendix B. These areas should continue to be used as accumulation areas for HM/HW generated by the MCAS with these materials being either transferred directly offsite to disposal facilities (with the paperwork being handled by the DPDO) or to the DPDO.

4.3 EL TORO DPDO

4.3.1 Warehouse -- Building 319

4.3.1.1 Description

The existing DPDO warehouse (Building 319) is a wood frame and roof building (70,000 square feet) with 8-inch concrete walls. Part of the building (approximately 15,000 square feet) is used by another activity at the Base. This building is in generally good overall condition, having been completely updated (new lights, roof, doors, etc.) in 1978. There is approximately 2,500 square feet of office space within the building. Figure 4.2 shows the location of this building in relation to other nearby base activities. The DPDO storage facilities are shown in greater detail on Figure 4.3.



SCALE: 1" = 600'

FIGURE 4.2
DPDO LOCATION SITE PLAN
EL TORO MCAS

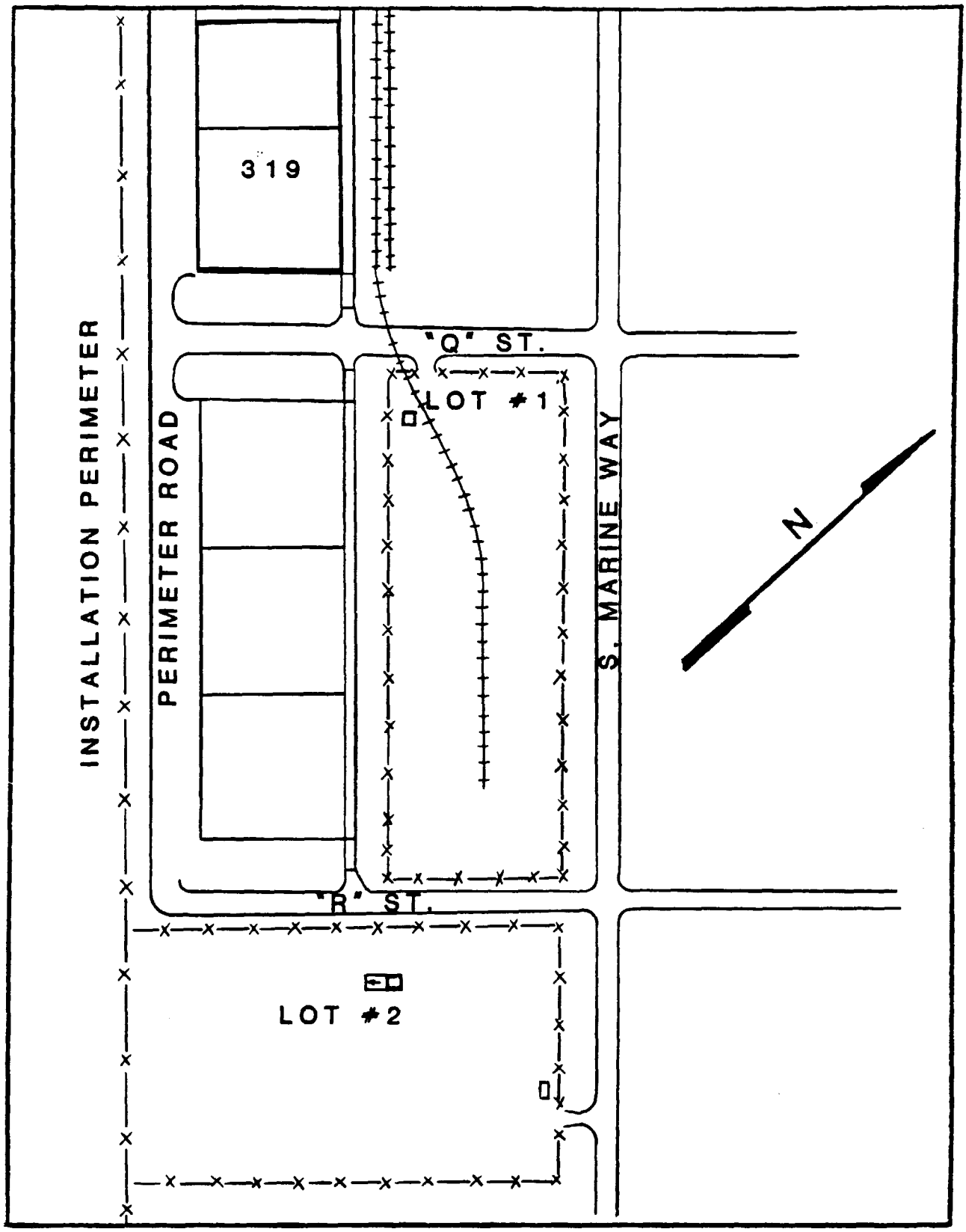


FIGURE 4.3
EXISTING DPDO STORAGE FACILITIES
EL TORO MCAS

The building floor slab is elevated 3 to 4 feet above the surrounding grade. The majority of the storage area consists of pallet storage racks. There are large aisleways between these racks to facilitate equipment and personnel access.

The building is out of the 100-year flood plain, and is located away from personnel living quarters and the highly populated areas of the base. Vehicle access to the building is acceptable. The warehouse is staffed between the hours of 7:00 a.m. and 3:30 p.m. and is secured by locked doors during off hours. It has no climate control and no forced ventilation.

Currently this building is not used for HM/HW storage. Adequate space is not available for HM/HW storage inside this warehouse and the safety and emergency response equipment available is limited to automatic sprinklers and a number of fire extinguishers. There is some minor cracking of the concrete floor slab.

4.3.1.2 Conforming Storage Analysis

The area inspection checklist completed during the visit to Building 319 is included in Appendix A. One problem with using this building for HM/HW storage is that it does not have adequate storage capacity for both nonhazardous materials and equipment and HM/HW. In addition, if it were to be used for HM/HW storage it would not be a single use warehouse as required by DoD 4145.19-R-1 (5-404), e.g., materials other than flammable or chemical wastes must not be stored in the same building. The lack of other additional warehouse space at the Base precludes movement of the nonhazardous materials and equipment stored in the warehouse to another location.

Building 319 is currently not equipped with spill containment or emergency response equipment and significant alterations and resources would be required to upgrade it for HM/HW storage capability.

4.3.1.3 Recommendations

It is recommended that Building 319 not be designated for short term use as a HM/HW storage facility. This is not a single use building as required by DoD regulations, and there are no other facilities available to provide warehouse space for the nonhazardous materials presently stored in the building.

4.3.2 Lot 1

4.3.2.1 Description

Lot 1 is a partially paved outdoor DPDO storage area (approximately 13,000 square yards) with no curbs or spill containment materials. It is secured by a fence with a lockable gate and contains a yard office and a portable toilet facility. This lot is the present storage location for HM handled by the DPDO. These materials are stored in rows along the northern fence. Ten-foot aisles are maintained between the rows. Acidic and corrosive materials are stored in 12 Conex containers (6 foot x 12 foot metal storage sheds), while other materials are stored on pallets. The area is not in a 100-year flood plain and it is located away from personnel living quarters. Vehicle and personnel access is good. The area is open between the hours of 7:00 a.m. and 3:30 p.m., and is kept locked at other times. There is presently no fire or emergency spill response equipment available in lot 1, however, there is an emergency eyewash station in the HM storage area and emergency communication is available at the yard office.

4.3.2.2 Conforming Storage Analysis

The area inspection checklist completed for DPDO lot 1 is included in Appendix A. Lot 1 has adequate storage capacity for the HM/HW to be handled by the El Toro DPDO. It is located near the DPDO main warehouse and office building, and away from personnel living quarters and the highly populated areas of the Base. The Conex containers provide controlled storage for the acidic and caustic wastes, and there is adequate open area for flammable, solvent, and organic materials storage while maintaining the required aisle space. Vehicle and potential buyer access is good and the area is monitored during daylight hours (7:00 a.m. to 3:30 p.m.) by DPDO personnel and locked during other hours.

Lot 1 was determined to be the existing El Toro MCAS storage facility with the best potential for short-term use as a HM/HW storage facility. However, while it possesses adequate storage capacity for the HM/HW generated at El Toro and Tustin, some of the other DPDO materials (nonhazardous) that are normally stored at this lot may have to be assimilated at other DPDO storage locations. In addition, fire and emergency spill response equipment as well as spill containment equipment would have to be provided at this facility in order to operate it in accordance with regulations.

This storage facility was evaluated according to the DLA conforming storage checklist system for comparison with the best MCAS facility (the six storage areas) to determine most nearly conforming storage status. The numerical rating developed from this evaluation for the DPDO lot 1 was 10 (as compared to 8 for the MCAS storage areas); the checklist used is attached in Appendix B.

4.3.2.3 Recommendations

It is recommended that the DPDO lot 1 be designated for short-term use as a HM/HW storage facility. This facility is currently performing this function for the HM generated by the activities, and with proper equipment and facility upgrading it can provide safe and controlled short-term storage for HM/HW.

4.3.3 Lot 2

4.3.3.1 Description

The DPDO lot 2 is a stabilized (gravel-covered) open lot (approximately 7,500 square yards) surrounded by a fence with a lockable gate. This lot is located approximately 1,000 feet east of the DPDO warehouse at R Street and S. Marine Way. It has a yard office and a portable toilet facility. During inclement weather operations in this area become difficult. The lot is located away from personnel living quarters and the highly populated areas of the Base. The area is open between the hours of 7:00 a.m. and 3:30 p.m. and is kept locked at other times. The area is presently used for storage of nonhazardous materials and equipment, and there is no fire, emergency response, or spill containment equipment located on the lot.

4.3.3.2 Conforming Storage Analysis

Because this lot is not paved and becomes inundated during inclement weather it is not currently possible to use it for storage of HM/HW. Significant upgrading and expenditures would be required to provide a paved storage surface that would be usable in all kinds of weather, and the safety and emergency response equipment necessary for conforming conditions. In addition, the Base Master Plan dictates repossession of this parcel of land in the near future. For these reasons, upgrading this site for storage of HM/HW is not justified.

4.3.3.3 Recommendations

It is recommended that lot 2 not be used for storage of HM/HW in the short term. A significant amount of upgrading of this facility would be required to meet conforming status, and this upgrading is unwarranted because the Base plans to repossess this area in the near future.

4.4 TUSTIN MCAS (HELICOPTER)

4.4.1 Description

The Tustin MCAS (Helicopter) HW storage facility (Building 248) is a newly constructed concrete masonry building with 1,100 square feet of storage space. Figure 4.4 depicts the floor plan for this building. This building was designed to handle the storage requirements for HW generated at the Tustin activity. At the present time HW generated at Tustin are immediately transferred to the El Toro DPDO, and the HW are sent offsite directly to a disposal facility within 90 days. With the DPDO having the responsibility for all HM/HW (except the eight categories mentioned previously) generated by this activity, HM/HW may all be transferred to El Toro, or the HW may continue to be transferred directly to a disposal facility with DPDO handling the paperwork.

Building 248 is constructed with five open-front storage bays with rollover berms for spill containment and one storage bay with a rollup door. The curbed areas in the bays are sufficient to contain 10 percent of the total stored volume or the total volume of the largest container stored. This building contains an office area with a telephone for emergency communication and a safety equipment storage room. Tne HM/HW storage area access is through a rollup door that closes onto a rollover berm, thus providing containment of any HM/HW that may be spilled during handling. There are five roof ventilators (two of which are powered) and vents in the walls (1 foot above the floor). The building electrical system and lighting fixtures are explosion-proof. The building has a centrally located emergency shower and eyewash station with a collection sump, and spill control (i.e., absorbent material, shovels, brooms) and safety equipment is on hand for emergency response. A vacuum truck is available for emergency response and spill control purposes.

The facility will be staffed as required to perform material transfer, labeling, inventory, and inspections for the HM/HW generated. At all other times the facility will be locked.

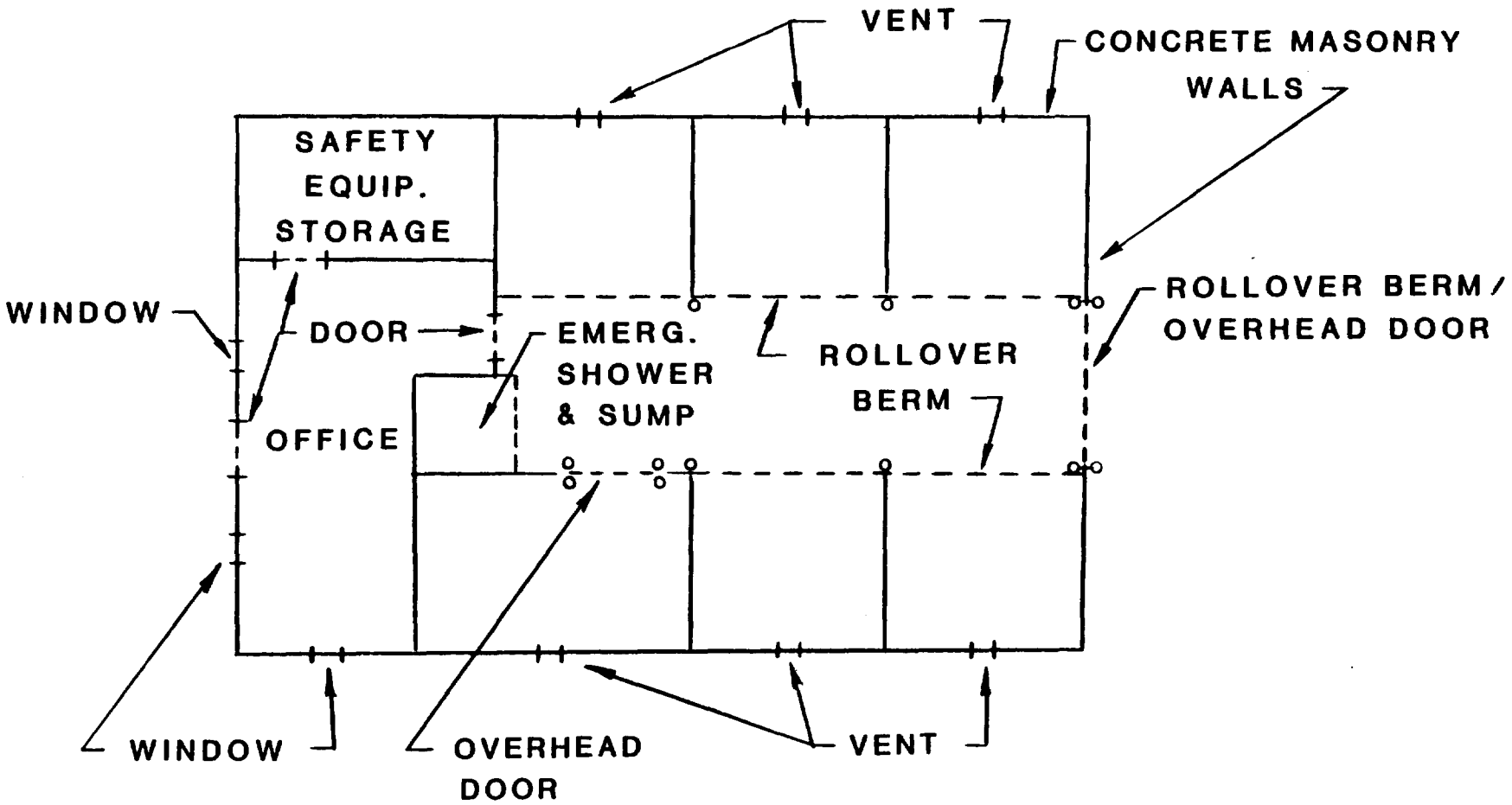


FIGURE 4.4

TUSTIN MCAS (HELICOPTER) HW STORAGE FACILITY

4.4.2 Conforming Storage Analysis

The area inspection checklist completed for the Tustin HM/HW storage facility is included in Appendix A. This is a new facility located away from personnel living quarters and out of the 100-year flood plain. The location of this storage facility, Building 248, is shown on Figure 4.5. It is properly equipped with the required safety and spill control equipment. The facility will be operated by trained and properly equipped personnel. Container labeling and inventory accounting will be performed immediately following receipt, and stored materials will be inspected on a regular basis.

4.4.3 Recommendations

This facility meets or exceeds all of the conforming storage standards. However, it is not large enough to assimilate all of the HM/HW to be handled by the area DPDO. For this reason it is recommended that this building be used as an interim storage, packaging, and labeling facility for the Tustin MCAS before the HM/HW are transferred to the El Toro DPDO or to the disposal facility. It can also be used for long-term storage if the conditions at the El Toro DPDO become overcrowded.

4.5 SEAL BEACH NWS

4.5.1 Description

The existing storage facilities at the Seal Beach NWS consist of miscellaneous open field areas located near generating activities. These areas are inappropriately designed and equipped for HM/HW storage, and upgrading for short-term use as a storage facility is not justified since a new facility (Building 38) is currently being constructed and should be available in the spring of 1984. The new Building 38 floor plan and the proposed location are shown on Figures 4.6 and 4.7, respectively. The new facility will be constructed of concrete floors and walls with segregated storage, spill collection sumps, and positive pressure ventilation. It will be equipped with an emergency eyewash station and shower, an alarm system and telephone. This storage facility will be staffed with trained personnel as required to perform materials handling, repackaging, labeling, inventorying, and inspections.

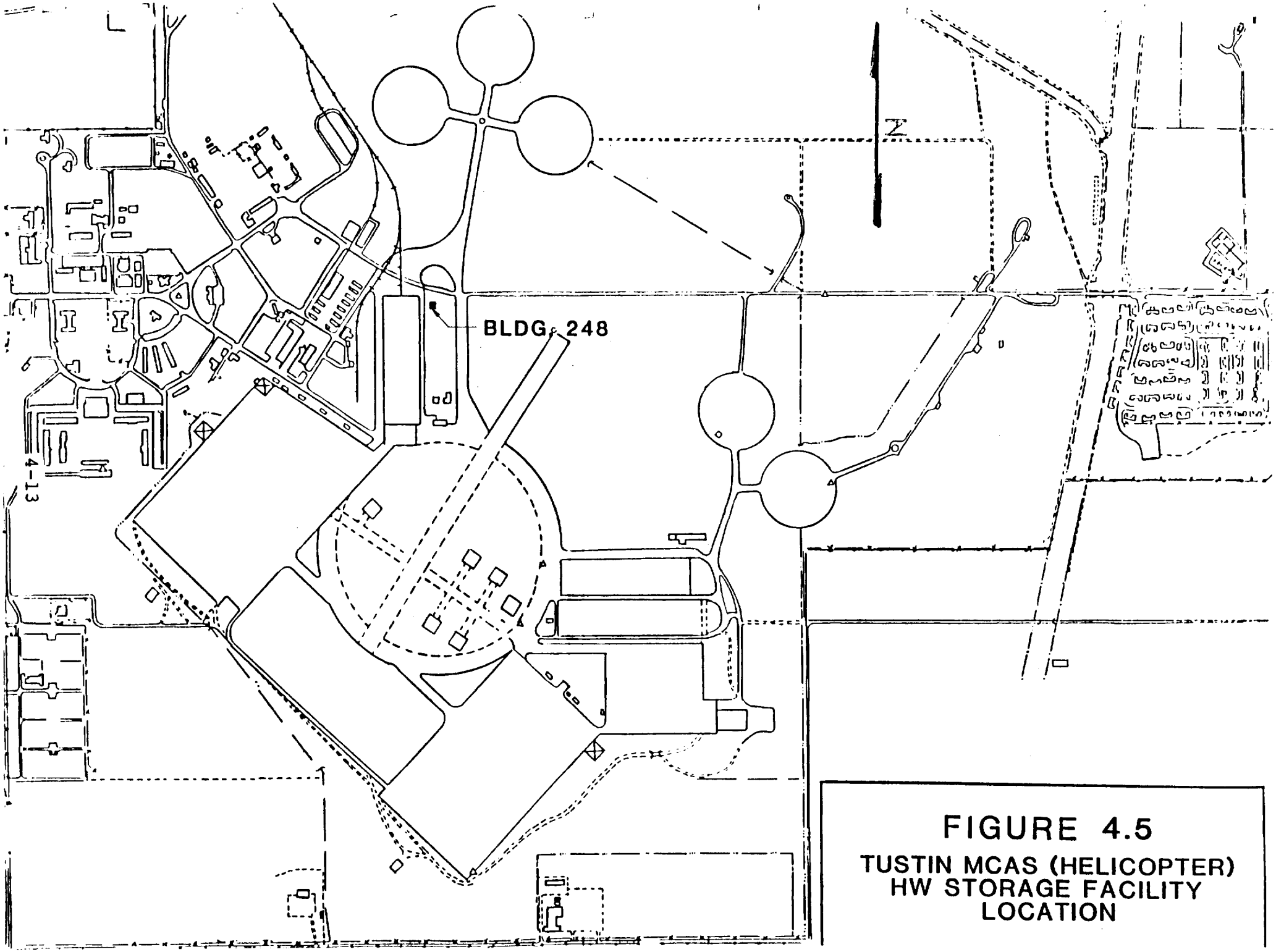


FIGURE 4.5

TUSTIN MCAS (HELICOPTER) HW STORAGE FACILITY LOCATION

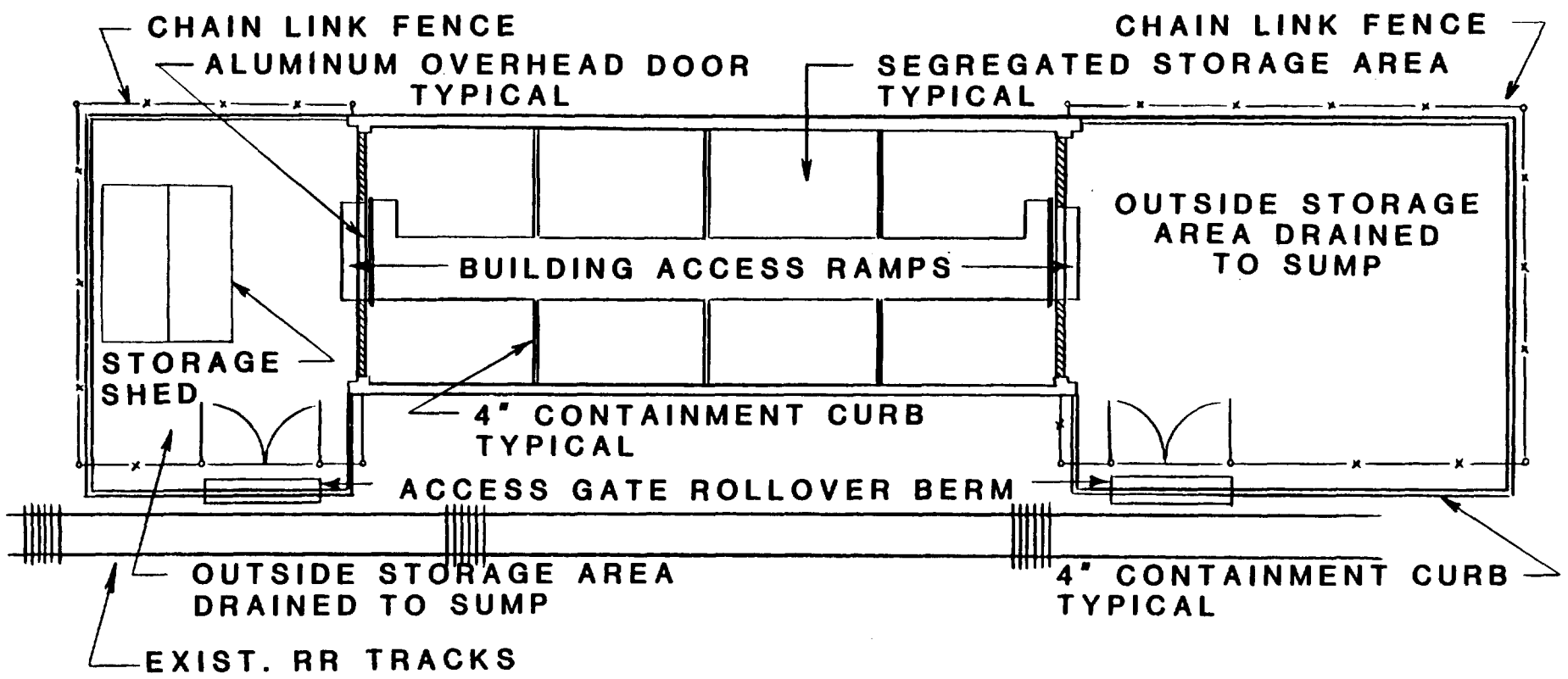


FIGURE 4.6
BUILDING 38
SEAL BEACH HM/HW STORAGE FACILITY

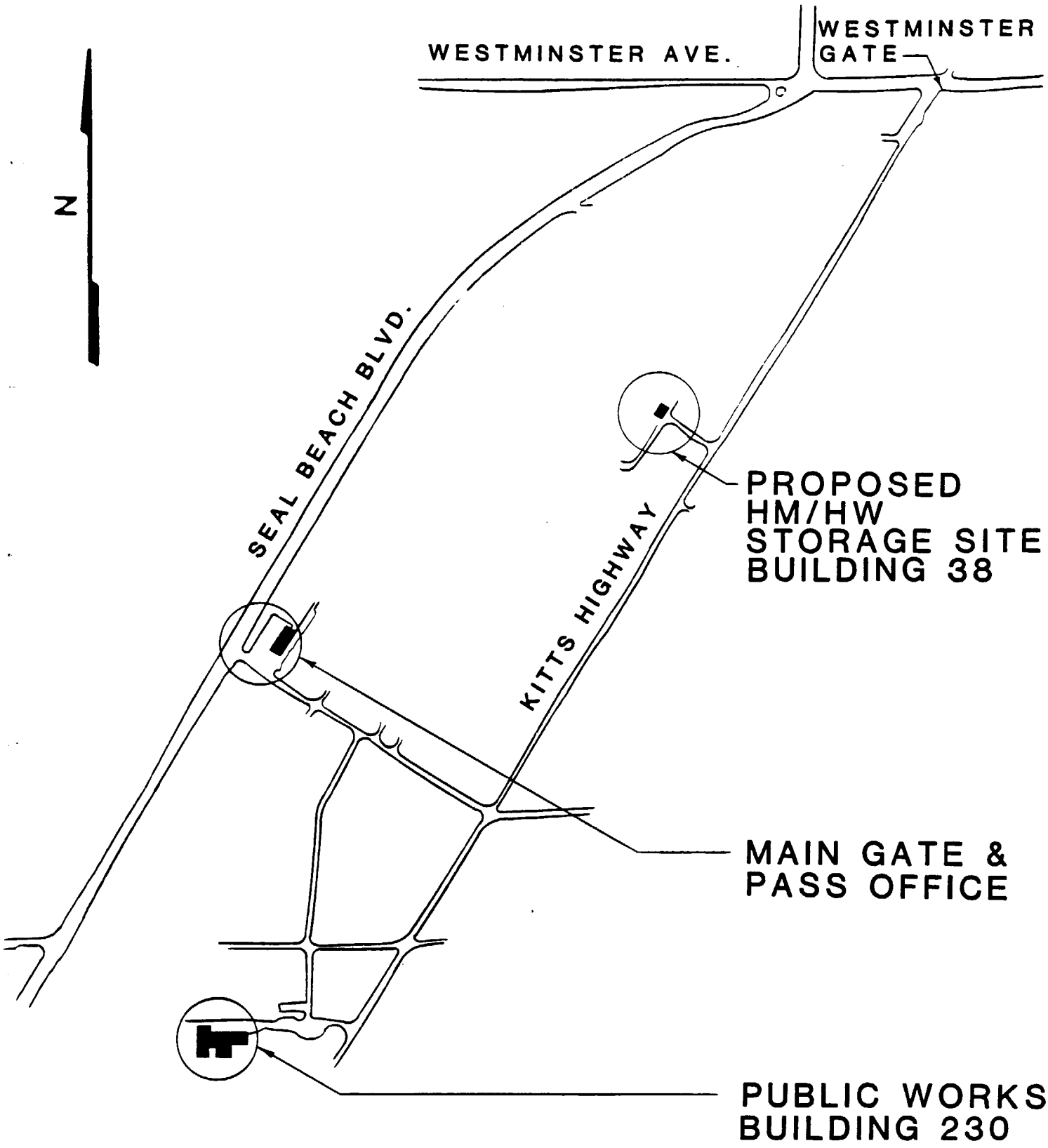


FIGURE 4.7
SEAL BEACH HM/HW STORAGE FACILITY

4.5.2 Conforming Storage Analysis

An area inspection checklist was completed for the proposed new facility and is included in Appendix A. The new facility is to be located away from personnel living quarters and the highly populated areas and out of the 100-year flood plain. It will be properly equipped with conforming safety and spill response equipment and communication systems.

4.5.3 Recommendations

It is recommended that HM/HW collected at Seal Beach before the new facility is completed be immediately transferred to the El Toro DPDO, or to a disposal facility. This would preclude the necessity for temporarily upgrading the existing facilities and would provide conforming storage. Once the new facility is completed and permitted, the HM/HW should be accumulated at the new Seal Beach facility with the HM being transferred to the El Toro DPDO. The HW could be picked up at the Seal Beach site by the contractor and transported directly to tne disposal facility, thus, eliminating double handling and minimizing the transport of HW on public roads.

4.6 LONG BEACH NSY

4.6.1 Description

HM/HW storage is handled at a number of locations at the Long Beach NSY. There are a number of accumulation areas (asphalt storage areas) located throughout the Shipyard and Naval Station that are used to collect containerized waste. HM/HW are stored at these locations for up to 2 weeks for analysis and container preparation before they are transported to the interim HM/HW storage facility located near the center of the Shipyard. Figure 4.8 shows the location of this storage facility. The interim HM/HW storage facility is currently being upgraded to more conforming status. However, its present location is designated for other use in the Shipyard's master plan, and it will have to be relocated by 1986 unless the plan is modified. Plans are being considered for construction of a new facility in a present parking lot located on Pier E.

The existing HM/HW storage facility consists of a partially covered, fenced concrete area. The HM/HW are stored separately by category under the covered area. Presently, there are no physical segregation devices. Spill control and decontamination equipment are on hand at the facility. Additional equipment is available on the emergency response truck.

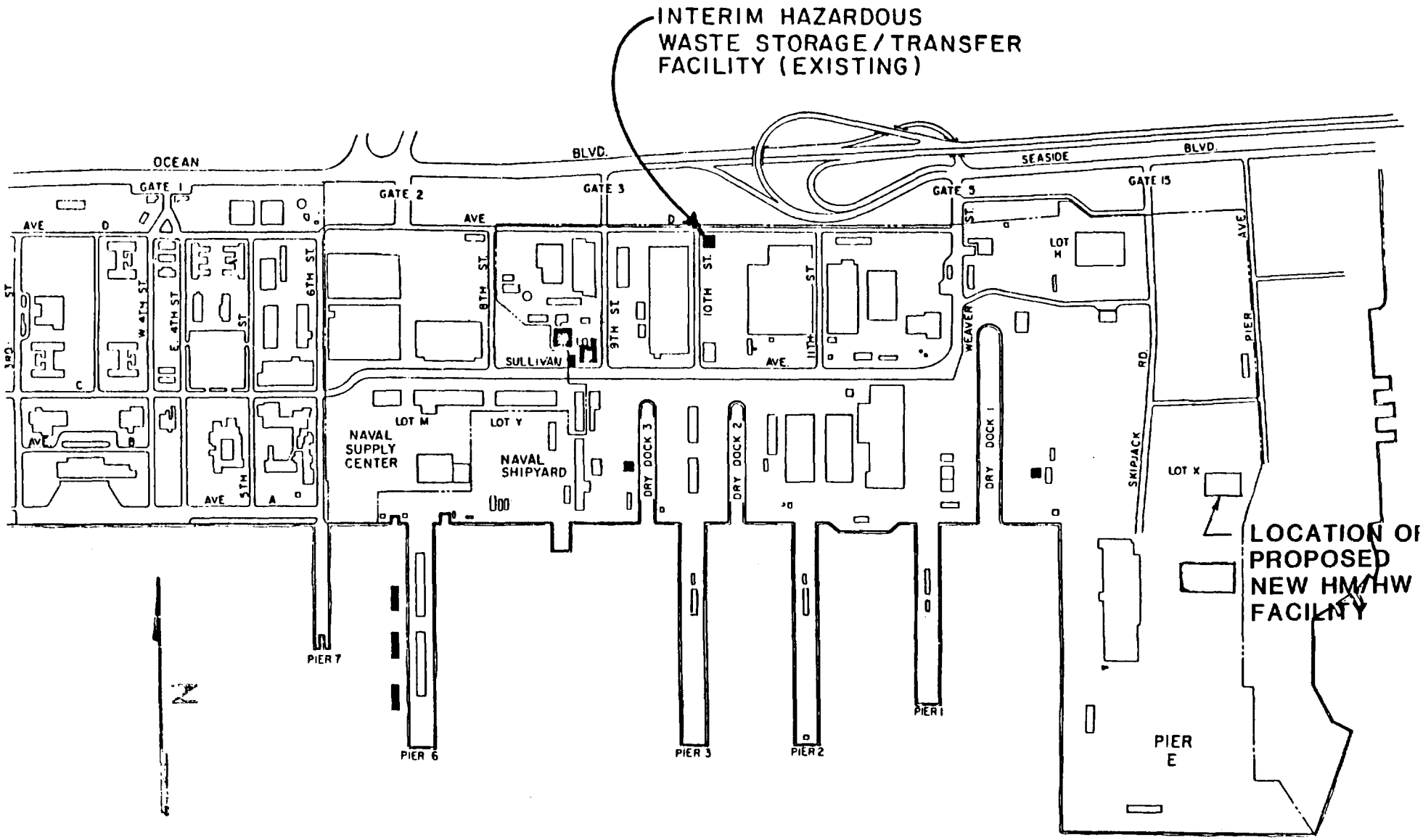


FIGURE 4.8

LONG BEACH SITE PLAN

Personnel that work at the facility are required to wear protective clothing. There is an emergency shower and eye wash station located at the facility, along with portable fire extinguishers and water hoses. Emergency breathing apparatus (SCBA) is located on the emergency response truck. There is good natural ventilation at the facility and additional ventilation is available from electric fans. Upgrading work being performed includes construction of a roof to cover the central portion of the facility and addition of a fire alarm, segregation structures, and the other equipment required to make this a conforming storage facility. Figure 4.9 shows the layout for this storage facility with the planned upgrading modifications.

This facility is staffed during the day (7:00 a.m. to 3:30 p.m.), and these personnel are responsible for HM/HW handling, inventorying, and inspection. The facility is kept locked after hours. This facility is located away from personnel living quarters; however, it is located in an industrial area of the Shipyard.

4.6.2 Conforming Storage Analysis

The area inspection checklist, completed during the site visit, is included in Appendix A. Problems associated with using this facility for DPDO long-term storage of HM/HW include its location in the industrial area of the site and its limited storage capacity. With the completion of the upgrading and with proper management, this facility should not be a nazard to the industrial area. In addition, if storage space becomes a problem, the HM/HW may have to be stacked and transfer and disposal will have to be expedited.

4.6.3 Recommendations

It is recommended that this facility continue to be used for HM/HW storage. Present protocols include transfer of saleable HM to the El Toro DPDO and pickup of HW at the site by disposal contractors with direct transfer to the disposal facility. This procedure should be continued when DPDO assumes disposal responsibility for all HM/HW to preclude incurring the significant expense of transporting all of the HW to El Toro and the safety hazards associated with double handling and transport of the wastes.

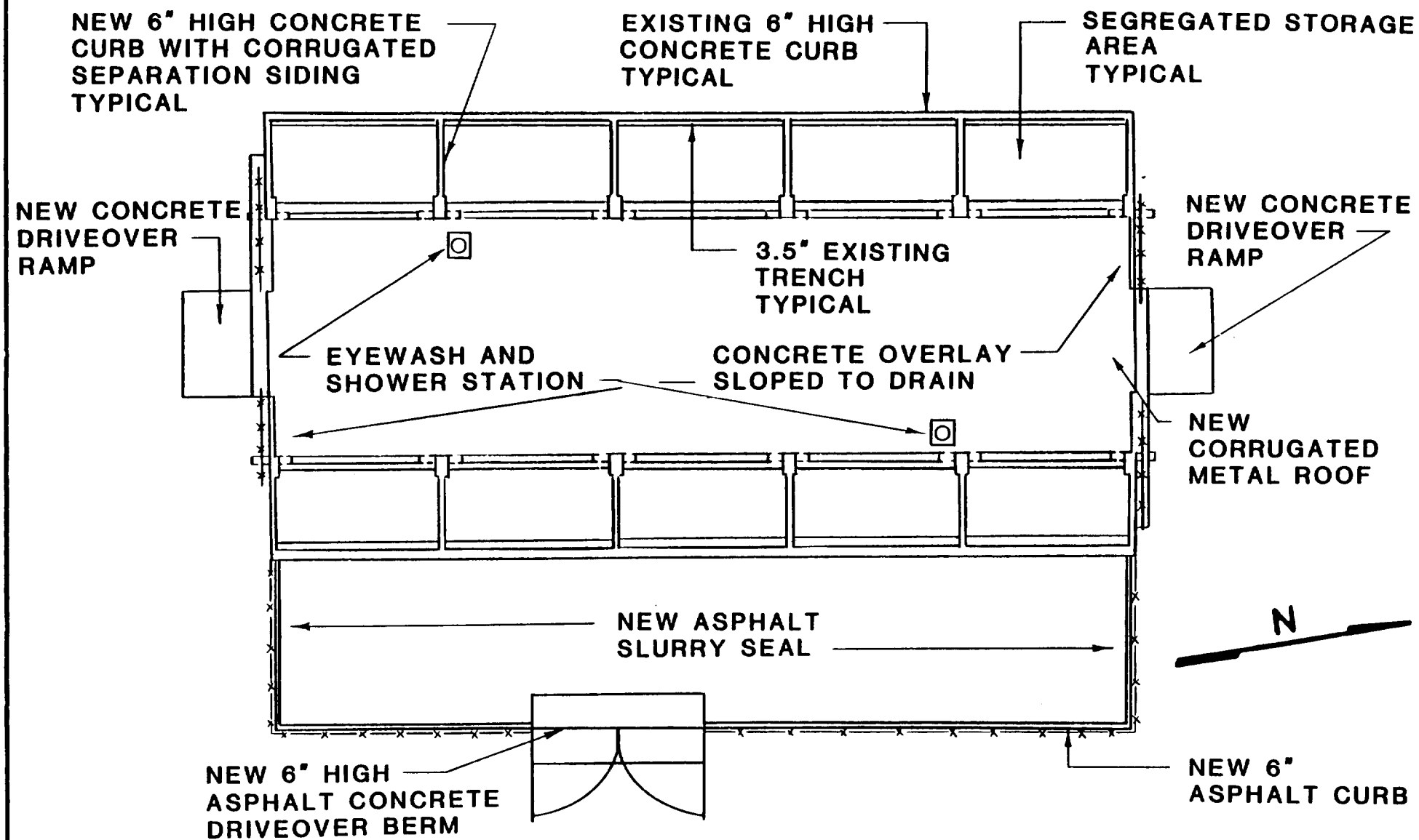


FIGURE 4.9
LONG BEACH UPGRADED HW STORAGE FACILITY

SCALE: 1/8" = 1'-0"

4.7 EXISTING FACILITY UPGRADING RECOMMENDATIONS

4.7.1 Recommendations

Lot 1 of the El Toro DPDO was determined to be the most conforming storage facility on the El Toro base. However, several upgrading measures must be implemented to allow for storage in accordance with regulations. Of primary importance is the requirement to provide spill containment. A berm should be constructed around this facility to contain spills and prohibit runon from adjacent areas. In addition, temporary or movable berms (sandbags) should be available to provide for segregation of the waste categories. These temporary berms should be situated in order to provide containment for 10 percent of the stored volume or the volume of the largest container in the storage area. Because of the existing cracks in this storage area, an asphalt sealant coat should be applied in order to preclude the possible infiltration of spills to subsurface soils.

The area for HM/HW storage should be expanded to a total of 20,000 square feet. Total storage areas for each HM/HW category should be provided as required with boundaries delineated by berms constructed of sand bags. These berms can be adjusted as required to provide adequate storage for the particular categories. The Conex containers can continue to be used for segregated storage of acidic and corrosive wastes. Drums can be stacked a maximum of two high. Other HM/HW should be stacked only when conditions warrant. If conditions become crowded screening times will have to be reduced.

The area to be used for HM/HW storage should be separated from the rest of the lot 1 open storage areas through construction of a fence (positioned to take advantage of the existing fence) with a lockable gate. A portable storage building should be placed within this area to contain the spill control equipment (absorbent material, shovels, brooms, and chemical neutralization material) and personnel safety equipment (coveralls, respirators, SCBA's, boots, safety glasses, and gloves) that must be obtained and kept stocked at this facility. This building should have a water hookup to provide for spill response and cleanup and an emergency shower. Other utilities should include an additional means of emergency communication (i.e., alarm) and electricity for emergency equipment operation (pumps).

Warning signs bearing the legend "Danger - Unauthorized Personnel Keep Out," visible from 25 feet must be placed on the fencing so that at least one sign is visible from all angles of approach. "No Smoking" signs must be placed at locations within the facility where flammable wastes are handled. It is also recommended that these signs be posted on the facility fence so as to be visible from all approaches to this facility.

It is recommended that at least one person (trained in chemical operations) be employed to staff this facility full-time during the day. This would ensure that someone would be available to document deliveries, keep an accurate inventory, perform inspections, and respond to emergencies.

4.7.2 Implementation Cost Estimate

The cost estimates for implementing the recommendations specified in this subsection are presented in Table 4.1.

Table 4.1

Short-Term Upgrading Measures Cost Estimate

	Item	Quantity/ Unit Cost	Total Cost
1.	Full-face canister-type respirator	4 at $100	$ 400
2.	Self-contained breathing apparatus (SCBA)	2 at $1,000	$ 2,000
3.	Sandbags	300 at $2/ 100-lb bag	$ 600
4.	Bags of absorbent material	100 at $4/ 50-lb bag	$ 400
5.	Lime	20 bags at $5/100-lb bag	$ 100
6.	Water line hookup with fire hose		$ 1,000
	Emergency shower		$ 500
7.	Warning signs	8 signs at $25 each	$ 200
8.	Additional fencing	400 ft at $12/lin ft	$ 4,800
9.	Portable fire extinguishers	4 at $80 each	$ 3,200
10.	Shovels, brooms, recovery drums		$ 200

Table 4.1
(continued)

	Item	Quantity/ Unit Cost	Total Cost
11.	Asphalt surface seal	20,000 sq ft at $0.10/sq ft	$ 2,000
12.	Asphalt berms to surround facility	600 lin ft at $2/lin ft	$ 1,200
13.	Portable storage building		$ 5,000
	Subtotal		$21,600
	Contingency (25 percent)		$ 5,400
	Total materials and equipment		$27,000
14.	Full-time employee trained in chemical operations		$20,000/yr

SECTION 5

TASK 4: LONG-TERM STORAGE RECOMMENDATIONS

5.1 SITE SELECTION AND FACILITY DESIGN CRITERIA

The objective of Task 4 was to develop alternative scenarios for long-term storage, together with project costs and a conceptual sketch, in the event that an existing site with short-term modifications does not fully meet conforming storage criteria.

The initial step in developing recommendations for long-term HM/HW storage was to examine present practices and identify alternative sites and facilities for consideration. Input in identifying these sites was obtained from DPDO and host facility personnel during the site visit conducted in July 1983.

The discussion of potential locations for a long-term HM/HW storage facility identified the following alternatives:

- Location at the existing El Toro MCAS storage facilities.
- Location at existing El Toro DPDO facilities, Building 319, lot 1, or lot 2.
- Location at the existing Tustin MCAS (Helicopter) HM/HW storage facility.
- Location at a proposed DPDO location at the Tustin MCAS.
- Location at the Seal Beach NWS.
- Location at the Long Beach NSY.

These sites were discussed during the site kickoff meeting and subsequently visited in the course of the evaluation of the existing storage facilities.

In addition to the information gathered in the course of discussions during the site visit, site evaluation guidance and design data were drawn from several sources, including the following:

- DLA Conforming Storage Evaluation Criteria.
- NAVFAC HW Storage and Transfer Facilities Design Criteria.

- Department of Defense (DoD) Chemical and Flammable Storage Facility Design Standards.
- Federal RCRA Regulations -- Final Facility Standards.
- State hazardous waste regulations.
- Data from the individual Base master plans.

In the course of discussions with DPDS and DPDO personnel, consolidation of DPDO operations at a single location was identified as a highly desirable objective in site selection. These personnel also identified several additional criteria to be used in site selection, including the following:

- Proximity of generators to the DPDO facility.
- Access to the DPDO facility by screeners and bidders.
- Transportation access.
- Availability of utilities.
- Location of common support facilities.
- Compatibility with surrounding land use as detailed in the master plan.

Personnel from NAVFACENGCOM stated that joint use (Marine Corps/ DPDO) facilities should be an important consideration in site selection.

Representatives of Tustin and El Toro identified the following constraints that must be considered in the site selection process:

- DPDO lot 2 at El Toro will be repossessed by the Base, in accordance with the MCAS Master Plan, for construction of a transportation facility (MILCON P-050 Automotive Organizational Shop).
- There are currently no other available locations on the El Toro base for locating new DPDO facilities.
- The Tustin MCAS (Helicopter) has indicated that they have no problem with relocating part or all of the El Toro DPDO activities to their base. It has been proposed that the El Toro DPDO lot 2 outside storage area be relocated to Tustin adjacent to the new supply storage warehouse. Additional area is also available for relocation of lot 1 storage activities, if required.

Representatives of the Long Beach NSY indicated that their existing HM/HW storage facility has a RCRA interim status storage permit, and they are in the process of upgrading this facility to more conforming status. This location is slated for other use in the Long Beach NSY Master Plan, and, as a result, this storage facility will have to be relocated by 1986. The Public Works Department is presently evaluating placement of a new facility in a current parking lot located on Pier E of the Shipyard.

A representative of the Seal Beach NWS indicated that they are currently using a number of areas for HM/HW storage. Plans have been drafted for upgrading an existing building at the base to serve as the HM/HW storage facility. Completion of this building is scheduled for April 1984.

5.2 SITING ALTERNATIVES

5.2.1 El Toro MCAS

5.2.1.1 Description

The existing El Toro MCAS facilities consist of six storage areas (described in detail in subsection 4.2.1). These covered concrete areas are located throughout the base for accumulation of HW generated in the area. They are secured by a fence and there is a 6 and one-quarter inch containment curb surrounding each area for spill collection. There is no means of physical separation of the various waste categories stored, and spill response materials are available only from the Public Works spill response van. The emergency equipment available at each area is limited to a portable fire extinguisher and an emergency eyewash station. According to Public Works Department personnel there are no other areas at the base available for a new HW storage facility.

5.2.1.2 Evaluation

The drawbacks associated with using these areas for long-term storage facilities include the following:

- Limited storage capacity.
- Limited area availability.
- Lack of physical separation of the various waste categories.

- Locations near populated industrial areas.
- Locations dispersed throughout the Base.
- Lack of climate controls.
- Lack of emergency response and safety equipment.

5.2.1.3 Recommendations

It is recommended that these locations not be considered for upgrading or constructing long-term storage of excess HM/HW because of the problems just described. They should continue to be used as interim storage facilities with the HM/HW being transferred within 90 days.

5.2.2 El Toro DPDO

5.2.2.1 Warehouse

Description

Building 319 is the El Toro DPDO storage warehouse. This facility is described in detail in subsection 4.3.1.1. Basically, it is a wood-frame building with concrete walls used currently for storage of used furniture, electrical equipment, and other miscellaneous equipment and materials. Part of the building is used for storage by another activity at the Base. The equipment and materials are stored in pallet racks, and large aisles between these racks provide good access. The DPDO personnel offices are located in this building and a portion of the warehouse is used for storage for another activity at the Base. This building currently has no forced ventilation or climate controls, and there is some minor cracking of the concrete floor.

Evaluation

The building lacks chemical storage facilities (i.e., curbed areas, with fire separation and blow-out walls) and spill and emergency response equipment. In addition, it is not a single-use warehouse as required by DoD 4145.19-R-1 for storage of flammable or chemical wastes.

Recommendations

The present use of this building for office space and various equipment and material storage by the DPDO and another activity at the Base precludes its use as a HM/HW storage facility. In

addition, no other warehouse space is presently available on the El Toro MCAS. As a result, movement of the stored equipment and materials to another location is not feasible.

5.2.2.2 Lot 1

Description

Lot 1 is an asphalt paved, outside storage area. It is described in detail in subsection 4.3.2.1. It is the location recommended for HM/HW storage over the short term. Currently, the area nearby is occupied by warehouses. A transportation facility is to be constructed at lot 2, which is nearby, within the next year. This new facility will increase the working population in the area.

Evaluation

This area is large enough to accommodate construction of a new DPDO HM/HW storage facility and at the same time provide space for continued HM/HW storage for the short term. The facility is located at the edge of the Base with easy access by DPDO and El Toro MCAS personnel, in addition to screeners, bidders, and disposal contractors. The location of the new HM/HW storage facility on lot 1 will accommodate one of the siting objectives, which is to have the HM/HW storage facility near the common support facilities. Its location near the new transportation facility should not be a problem with proper operating procedures, contingency plans, and safety and emergency response equipment.

Recommendations

It is recommended that the lot 1 site be considered for the construction of a long-term HM/HW storage facility. Selection of another site on the Base is hampered by the lack of available land. It was indicated that the construction of a permanent HM/HW storage facility on lot 1 would not conflict with the Base master plan.

5.2.2.3 Lot 2

Description

Lot 2 is a stabilized outdoor storage facility located adjacent to lot 1. It is described in detail in subsection 4.3.3.1.

Evaluation

This area is to be repossessed by the El Toro MCAS to facilitate construction of the new transportation facility and is not available for permanent location of a new HM/HW storage facility.

Recommendations

It is recommended that lot 2 not be considered for location of the new HM/HW storage facility because it is already committed to another use.

5.2.3 Tustin MCAS (Helicopter) Existing Storage Facility

5.2.3.1 Description

The Tustin HW storage facility (Building 248) is a new concrete masonry building described in detail in subsection 4.4.1. It was constructed specifically for HW storage and is equipped with segregated storage bays with berms for spill containment and good forced ventilation. It is equipped with explosion-proof wiring and lighting and an emergency eyewash station and a shower. Spill control and safety equipment is stored at this facility. It is a small facility designed to accommodate HW generated at the Tustin MCAS (Helicopter).

5.2.3.2 Evaluation

This is a well designed and constructed HW storage facility, however, it is inadequate in size to accommodate all of the HM/HW handled by the El Toro DPDO.

5.2.3.3 Recommendations

It is recommended that the Tustin HW storage facility not be designated as the HM/HW area DPDO because of its inadequate size. However, it should continue to be used for short-term storage of HW with the HW being moved directly to a disposal facility.

5.2.4 Proposed DPDO Location at Tustin MCAS (Helicopter)

5.2.4.1 Description

The Tustin MCAS (Helicopter) is currently constucting a new supply warehouse. One alternative that has been proposed is that this general location also be used for resiting the HM/HW area DPDO to Tustin. The location is away from personnel lodging and highly populated areas of the base, as shown on Figure 5.1. There is enough area available for construction of a new warehouse, outside storage, and a new HM/HW storage facility.

5.2.4.2 Evaluation

There would be an additional cost to the DLA or the Navy (whoever mandates this move) to move the area DPDO to this location. It is a good location away from centers of population with good transportation access. In addition, it is more centrally located in relation to the other HM/HW generating facilities (Long Beach NSY and Seal Beach NWS). However, construction of the HM/HW storage facility at this location would also require construction of a second facility, a single use HW area, at the El Toro MCAS at an increased total construction cost (in relation to one facility at El Toro; see Appendix C). Operating costs that would increase include additional transportation and personnel costs.

5.2.4.3 Recommendations

It is recommended that the HM/HW area DPDO remain at El Toro for the following reasons:

- A new long-term HM/HW storage facility is required at El Toro.
- It is more cost-effective to construct one new (HM/HW) facility rather than two new facilities (a new single-use facilty at El Toro and a new DPDO facility at Tustin).
- The cost to construct a DPDO warehouse at Tustin would be prohibitive.

It is also recommended that the new HM/HW area storage facility be built at the DPDO lot 1 at El Toro. This would facilitate construction of a joint use facility with the related cost savings.

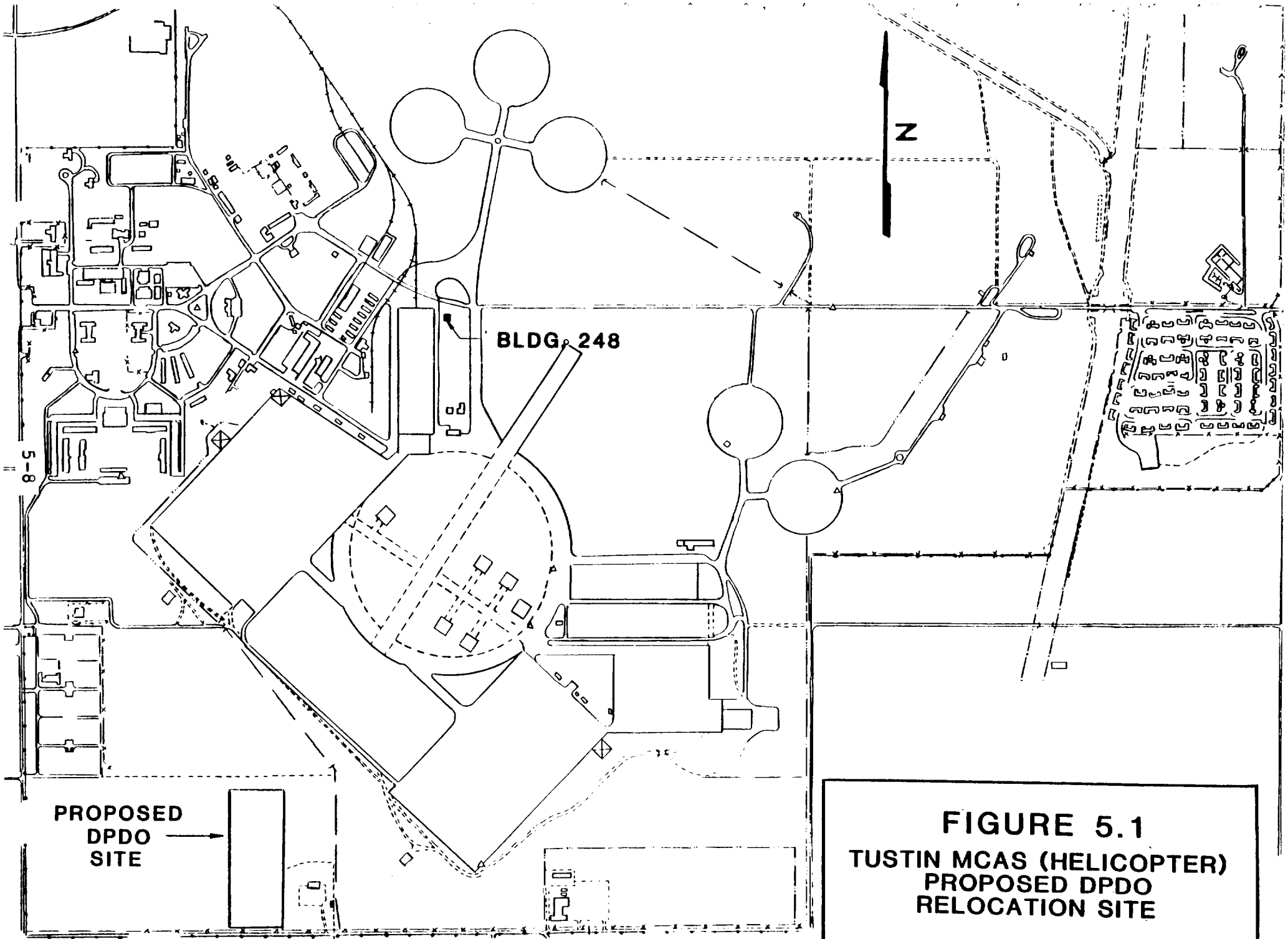


FIGURE 5.1
TUSTIN MCAS (HELICOPTER)
PROPOSED DPDO
RELOCATION SITE

It is recommended that the outside DPDO storage to replace lot 2 be placed at the proposed Tustin location because takeover of this area for construction of a transportation facility is in the El Toro MCAS Master Plan. This outdoor area could be expanded to accommodate nonhazardous material that may be lost to the new HM/HW storage facility.

5.2.5 Seal Beach NWS

5.2.5.1 Description

The Seal Beach NWS is currently in the process of upgrading an existing building for use as their HM/HW storage facility. This facility is described in detail in subsection 4.5.1. It will be equipped for chemical storage with segregated storage areas and positive pressure ventilation. Spill control and emergency response and safety equipment will be available at the facility. It will be located away from populated areas of the site and it will be staffed as required to perform HM/HW operations.

5.2.5.2 Evaluation

This facility will meet DLA conforming standards for HM/HW storage. It will be sized and properly equipped and staffed to allow for long-term storage of the HM/HW generated at Seal Beach. The isolated location of this facility will preclude interruption of activities at this station in the event of an emergency while providing easy access to transportation.

5.2.5.3 Recommendations

It is recommended that this facility be used for long-term storage of HM/HW generated at Seal Beach with the HM ultimately being transferred to the El Toro HM/HW area DPDO. Large quantities of HM could be screened and sold directly from this facility if required by the El Toro DPDO. HW should be picked up at this site by the disposal contractor and transported directly to the disposal facility with only the paperwork being handled by the El Toro DPDO. This would reduce the total transportation distance and the safety risks associated with transporting HW to the El Toro DPDO site.

5.2.6 Long Beach NSY

5.2.6.1 Description

The HM/HW storage facility at the Long Beach NSY is in the process of being upgraded to conforming status. It is described in detail in subsection 4.6.1. The upgraded facility will be enclosed and have segregated storage areas and good ventilation. An emergency eyewash and shower station will be provided along with spill and emergency response apparatus and equipment. This facility is located in a highly populated section of the Shipyard; however, it must be moved by 1986 (in accordance with the master plan) to provide space for another activity.

5.2.6.2 Evaluation

The upgraded facility will meet DLA conforming standards for HM/HW storage. It will be sized and properly equipped and staffed to allow for long-term storage of the containerized HM/HW generated at the Long Beach NSY. Upon completion of the facility upgrading, this storage area should not present a hazard to the industrial area.

5.2.6.3 Recommendations

It is recommended that this facility be used for long-term storage of the containerized HM/HW generated at the Long Beach NSY. The HM should continue to be transferred to the El Toro DPDO for screening and sales. HW should be picked up at the Shipyard by the disposal contractor and transported directly to the disposal facility. In this manner, only the paperwork would be handled by the DPDO and intermediate transportation of hazardous materials would be minimized.

5.3 USE ALTERNATIVES

5.3.1 Description of Alternatives

In analysis of the existing Marine Corps HM/HW storage facilities at the El Toro MCAS it was determined that there is a need for a central indoor storage facility for repackaging, characterizing, and accumulating some of the HW that are collected at the six interim storage areas before transfer to the DPDO or offsite disposal. This facility could also provide office and equipment storage space and a personnel decontamination and locker area. In addition, a laboratory for characterization of waste streams is also needed. It was also determined that a new DPDO facility would have to be constructed at the DPDO lot 1.

An alternative to construction of a Marine Corps central storage facility and a DPDO HM/HW storage facility at the El Toro MCAS would be construction of a joint-use facility. This joint-use facility could provide separate HM/HW storage, office, and equipment storage areas for each activity while providing a joint use personnel decontamination and locker facility, laboratory, and emergency response equipment. In addition, the cost for construction of a joint-use facility would be less than that for construction of two separate facilities (see Appendix C). The activity using the largest portion of a joint-use facility would be expected to bear the total cost for construction.

5.3.2 Evaluation of Alternatives

The use of the six existing Marine Corps storage areas for extended storage of some of the HM/HW generated (small quantities, high hazard, incompatible, or those requiring repackaging or characterization) is undesirable because these areas provide limited protection from inclement weather and temperature extremes. Segregation of incompatible waste streams stored at these areas is currently possible only with temporary berms because there are no permanent physical barriers. Fire, spill, and emergency response equipment is minimal at these areas, and there are no full-time coordinators for inventory control, inspection, and emergency response. Upgrading each of these six areas to provide indoor storage, staffing, and address other deficiencies required for long-term storage is not economically justified.

Regular transfer of some of the HM/HW accumulated in the six interim storage areas to an indoor storage area in a joint-use facility would vastly improve operational safety from the standpoint of protection from weather, temperature control, and segregation with permanent physical barriers. In addition, HM/HW repackaging, characterization, and accumulation (for truckload quantities) could be performed at this facility. Those wastes not requiring repackaging or characterization that are accumulated in large quantities can be transferred from the six storage areas directly to the disposal facility.

The new facility would be equipped with facility fire controls (sprinkler system) and alarms and spill and emergency response equipment. Support facilities such as shower and decontamination facilities could be shared by Marine Corps and DPDO personnel. There would be improved emergency response capability in either Navy or DPDO custody areas because of the availability of essentially two teams of trained personnel in the joint-use building. In addition, transfer of HM/HW to DPDO custody would be simplified to movement within a single building.

5.3.3 Recommendations

It is recommended that construction of a joint-use facility at the DPDO lot 1 for HM/HW storage be considered. An indoor HM/HW storage facility is needed by the Marine Corps and a joint facility would vastly improve operational safety over separate facilities. In addition, it has been indicated that there is no available land on the base for new construction at this time. Lot 1 is large enough to accommodate construction of a new joint use facility while allowing for continued short-term HM/HW storage. Its location is away from personnel living quarters and has good access for transportation.

SECTION 6

CONCEPT DESIGN

6.1 ASSUMPTIONS

The conceptual design and layout of a new joint-use storage facility is based on the guidelines from the sources described in subsection 5.1 of this report. The design required, however, that certain assumptions be made concerning base data and operations.

6.1.1 HM/HW Generation

The HM/HW generation data developed in Tasks 1 and 2 for this site, along with additional MCAS generation reports received after these tasks were completed, was used as a basis for sizing this facility. The generation numbers developed in Task 1 for each waste category and each container type were used in determining the individual storage area requirements. The storage area requirements were based on standard size containers. Drum storage areas were developed by determining the number of pallets (four drums to a pallet) that would be required for the HM/HW generated that is stored in drums. Double stacking of full pallets either on the floor or in racks was assumed. Shelf storage was determined by the area requirements to store the various other container types. Storage shelves 2 feet wide were assumed and a total of four shelves (spaced in approximately 2 foot increments) were assumed for each unit with the top shelf positioned at a maximum height of 6 feet. PCB and lithium battery storage was provided as requested by NAVFAC, and areas were sized based on recommendations received in conversations with DPDS and MCAS personnel. In order to project future increases or decreases in HM/HW generation of the contributing activities, specific facility personnel were questioned. It is the assessment of the personnel questioned that there will be no significant increase or decrease in the quantities of HM/HW generated. In the design of this facility the storage areas were oversized (by 10 percent) to accommodate potential increases in HM/HW generation and periods of unusually high waste generation. It has been assumed that floor and shelf space will be fully utilized for storage.

6.1.2 Storage Time

The MCAS will be required to properly containerize and label all HM/HW prior to turn-in to the DPDO, as well as complete all paperwork associated with custody transfers. It has been assumed that this material handling and paperwork will take a maximum of one week's effort before the HM/HW can be transferred to the DPDO. Therefore, it has been assumed that the MCAS portion of the facility will require a storage capacity for approximately one week of waste generation.

The DPDO is required to subject all HM/HW to a screening process for reutilization, transfer, and donation to other Federal agencies. HM/HW must be subjected to the same screening process at least once per year. Following this screening, HM/HW are offered for public sale by a bidding system. If HM/HW cannot be sold, they are assigned to disposal. According to DPDO timetables completion of these procedures requires 90 days, but DPDO personnel indicated that delays typically extend the time required from six to nine months. The facility was sized to handle six months of HM/HW generation. The screening/sales/disposal process may have to be expedited at times by the DPDO in order to avoid crowded conditions at the storage facility. In a conversation with DPDO personnel during the site visit, they indicated that they could go on a 60-day cycle if required to avoid time delays and overcrowded conditions.

6.2 FACILITY LAYOUT AND OPERATIONS

6.2.1 Floor Area

The total area of the conceptual facility design is 17,200 square feet. This area includes provisions for HM/HW storage, aisle space, internal operations, and truck loading and unloading. Space is also provided for support facilities, including MCAS and DPDO offices and equipment storage areas, shower/decontamination/locker facilities, and a laboratory. Table 6.1 summarizes the required floor area for the seven waste categories for the DPDO and the MCAS. These areas assume a drum stacking total height of 7 feet, adjustable shelf space with a design basis of four shelves, a maximum total height of 7 feet, and the required aisle space (at least 8 feet for main aisles and 4 feet for side aisles) for forklift maneuvering, inspections, and fire-fighting purposes. The miscellaneous storage bays are available for "one time" wastes, empty drums, and overflow from the other waste storage bays. The area requirements for the MCAS, DPDO, and joint support facilities are given in Table 6.2.

Table 6.1

Storage Space Provided at Conceptual Facility

Material Category	DPDO Area sq ft	MCAS Area sq ft
Toxic materials	200	100
Acids	200	100
Oxidizing agents and caustics	200	100
PCB's	540	100
Flammable solvents and organics	6,500	600
Lithium batteries	---	100
Miscellaneous storage	200	100

Table 6.2

Area Provided for Support Facilities

Support Facility	DPDO Area sq ft	MCAS Area sq ft
Office	200	200
Shower/decontamination/ locker	500	---[1]
Equipment/supplies storage	250	225
Laboratory	300	---[1]

[1]Joint-use facility.

6.2.2 Conceptual Layout

The facility layout (see Figure 6.1) provides for six storage bays for HM/HW in DPDO custody. The flammable solvents and organics storage bay is equipped with fire doors and an exterior blow-out wall. Spill containment is provided by 6-inch rollover berms at each exit. The other five bays are separated by 8 foot high partitions with spill collection trenches at each exit. The DPDO PCB storage area is depressed in order to provide spill containment in accordance with regulations. Access to the loading docks will be by overhead rollup metal doors.

Shelf and pallet storage space should be oriented as shown on the figure with two exits as a minimum. The flammables storage bay should be oriented with at least 2-foot buffers from the walls. Aisle space should be provided as shown to allow forklift access to the stored materials.

The MCAS storage area will be separated from the ancillary area and the DPDO storage area by floor to ceiling walls with an internal overhead rollup metal door. Seven small storage bays will be provided and separated from the main traffic access corridor by spill collection trenches. These bays will be separated by 8-foot high partitions. The flammables, solvents, and organics storage bay will be provided with an exterior blow-out wall and will be fully enclosed with a fire door for access. Shelves can be added to the MCAS storage bays as required, and the storage height for shelves or stored drums should not exceed 7 feet.

Separate office space for DPDO and MCAS personnel has been provided in addition to separate storage for equipment and supplies. The shower/decontamination/locker facilities and the laboratory are intended to be joint use. The laboratory should be used for screening/characterizing materials or wastes. Internal access to the office area is provided by passing through the decontamination area. This provision is intended to provide passive reinforcement of personnel hygiene protocols concerning departure from a chemical handling area.

Transportation access will be through the lot 1 main gate on Q Street (see Figure 6.2). The loading areas around the building will be sealed with asphalt and surrounded by asphalt rollover berms to prevent runon into the loading areas. The loading areas are covered and provided with spill collection trenches and sumps. Walls adjacent to the loading areas are provided to preclude wind transport of precipitation into the spill collection facilities. Access ramps lead into the main traffic corridor to allow forklift access into and out of the facility. These ramps will also allow fire department access into the DPDO main traffic corridor in the event of a fire.

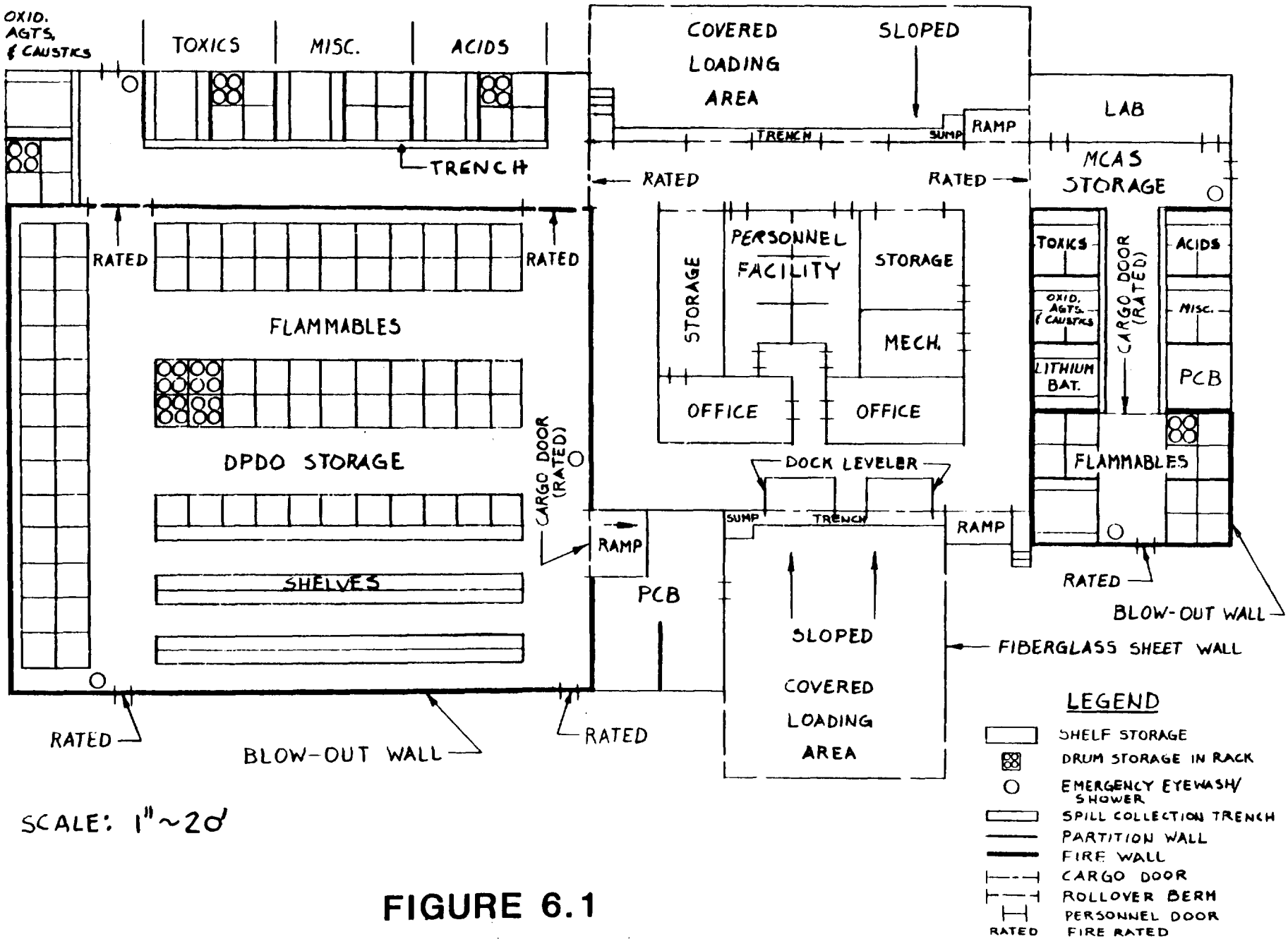


FIGURE 6.1
CONCEPTUAL FACILITY LAYOUT

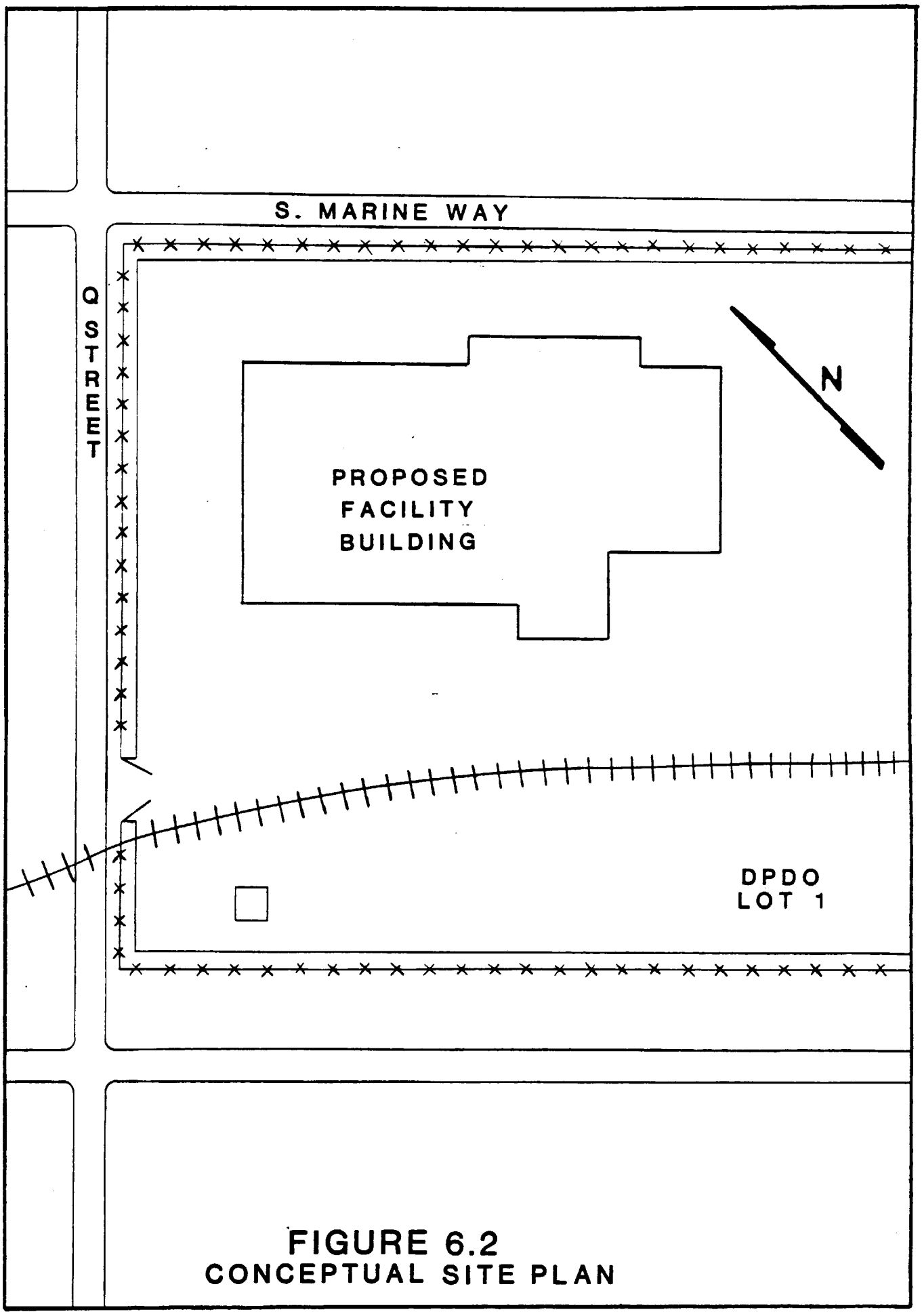


FIGURE 6.2
CONCEPTUAL SITE PLAN

6.2.3 Conceptual Equipment

Spill containment will be provided by the collection trenches and sidewalls of the storage bays. Tables 6.3 and 6.4 summarize the required containment capacity (10 percent of stored volume or the total volume of the largest container stored except for PCB storage areas that must provide spill containment for at least two times the internal volume of the largest PCB article or container stored, or 25 percent of the total internal volume of all PCB articles or containers stored) and actual containment capacity for the DPDO and MCAS storage bays, respectively. The floors will be sealed to ensure spill containment. The acids; oxidizing agents and caustics; and flammables, solvents, and organics storage bays will be sealed with corrosion- and solvent-resistant coatings.

Five emergency shower and eyewash stations should be located as shown in the conceptual layout. The combination shower/eyewash units will be located over grates that drain to small sump tanks for ease of collection of water and spilled material in the event the unit is used. These tanks should not be connected to any drain lines to preserve the integrity of spill interception in the event of an accidental release of material in the main traffic corridor.

All storage bays should be equipped with overhead heat-activated fire control systems. The flammables, solvents, and organics storage bays should be equipped with fire doors. In addition, an exterior wall of these storage bays should be designed to blow out in the event of an explosion to prevent structural damage to the facility or stored wastes. The interior walls of these storage bays should be designed and constructed to withstand an explosion.

All lighting, electrical fixtures, and electrical equipment must be explosion-proof and corrosion-resistant. In accordance with DoD guidelines, all electrical fixtures must meet the standards for Class 1, Division 2 of Article 500 of the National Electric Code. To meet DoD standards, the lighting fixtures must provide at least 10 foot-candles of illumination in the storage areas and at least 50 foot-candles in all other areas of the facility. Grounding strips should be installed on the storage bay walls for use during material transfers to ground the containers and thereby prevent possible ignition from static electricity.

Table 6.3

Spill Containment Summary
DPDO Storage Area

Material Category	Maximum Stored Volume (gals)	Required Spill Containment Capacity (gals)	Actual Spill Containment Capacity (gals)
Toxic materials	3,000	300	300
Acids	1,600	160	300
Oxidizing agents and caustics	170	17	300
Flammables, solvents, and organics	63,000	6,300	24,000
PCB's	200	100	4,000

Table 6.4

Spill Containment Summary
MCAS Storage Area

Material Category	Maximum Stored Volume (gals)	Required Spill Containment Capacity (gals)	Actual Spill Containment Capacity (gals)
Toxic materials	120	12	150
Acids	70	7	150
Oxidizing agents and caustics	10	1	150
Flammables, solvents, and organics	2,400	240	2,300
PCB's	100	100	150
Lithium batteries	50	5	150

Ventilation equipment must be installed in the facility and be capable of providing at least 0.25 cubic feet of air flow per minute for each square foot of area in order to meet DoD standards. It is recommended that positive pressure be maintained in the offices, shower facilities, and equipment/supplies storage to prevent possible infiltration of any toxic or flammable vapors. Negative pressure should be maintained in the storage areas of the facility to help prevent any build-up of toxic or flammable vapors in these areas.

Communications systems should include telephone extensions located at several points within the storage areas, which connect to telephones in the office areas and can also be used to summon outside assistance if required. An intercom located in the offices and connected to a loudspeaker system in the storage areas should also be installed to provide the capability for issuing instructions in an emergency situation. Manual and heat/smoke-sensing fire alarms should be installed at locations throughout the facility to warn of emergency situations. The alarms should sound within the facility, as well as at the MCAS Fire Department.

Absorbent material and neutralizing agents should be stocked in the equipment/supply storage areas for response to spill and leak incidents. Small quantities of absorbent material should also be available in each large storage bay for immediate response.

Hose hook-ups should be provided in the storage areas for washdown and final decontamination following spill or leak incidents. Chemical pumps to transfer the materials from leaking containers to recovery drums should also be stocked.

Personal protective equipment provided to the facility should include protective clothing and respiratory protection gear. The protective clothing should consist of overalls made of polylaminated Tyvek or equivalent materials. The respiratory gear should include full-face canister-type respirators and self-contained breathing apparatus (SCBA). Emergency respiratory escape packs should be located in the flammables, solvents, and organics storage bays. Footwear consisting of corrosive- and solvent-resistant neoprene boots with steel toes should be provided. Eye protection in the form of safety goggles, safety glasses, or full-face shields should be mandatory in the storage areas. Gloves of n-butyl rubber or of equivalent chemical-resistant material should be provided. All personnel should be provided with hard hats.

Signs bearing the legend "Danger-Unauthorized Personnel Keep Out" legible from 25 feet should be posted on the building outside all entrances to the facility. "No Smoking" signs should be posted at all entrances to the storage areas and at locations throughout the storage portion of the building.

6.2.4 Conceptual Operations

Excess HM/HW turned in by MCAS generators and from the MCAS accumulation areas will be received by MCAS personnel in the MCAS portion of the facility. The containers will be inspected for integrity and labeled. On completion of these activities and DPDO turn-in procedures, the HM/HW will be physically transferred to DPDO custody through the internal overhead door.

After transfer to DPDO custody, the materials will be placed in appropriate storage bays according to their compatibility grouping. The HM/HW will be stored in the bays throughout the screening and sales process. Materials sold or consigned to disposal will be removed through the bay doors onto the loading dock for transfer to transport vehicles.

While materials are in storage in DPDO custody or held in MCAS custody for processing, the containers will be kept tightly closed unless materials are being transferred into or out of the container. All storage bays will be inspected at least weekly for evidence of leaks, spills, pressure build-up, or conditions that could lead to a fire. If any of these conditions are noted, remedial action will be instituted immediately.

Inspections should also include verifying that emergency response equipment is stocked and in proper operating condition. All alarm and emergency communications systems should be tested for proper operation weekly.

HM that is to be transferred to the El Toro DPDO from the Long Beach NSY, Seal Beach NWS, Tustin MCAS (Helicopter), or other generating activities, must be properly containerized and labeled at the activity facility. Proper paperwork will have to accompany HM transferred to the El Toro DPDO in order for it to be accepted.

Contingency plans must be drafted to address potential spill scenarios that could occur during HM/HW transport, transfer, handling, and storage. These plans should include emergency response coordinators (for 24 hours a day, 7 days a week) and a list of facilities and personnel to be contacted for specific emergency situations. They should be drafted for each existing facility at the generating activities, and they must be in effect before the new DPDO MCAS facility is completed.

All personnel that are involved in HM/HW storage, transport, transfer, and handling at all the generating and storage facilities must be adequately trained in chemical operations. This training should include at least eight hours of orientation before a worker is allowed to assume his duties. Refresher training sessions (at least one hour) should be conducted at least quarterly for all of these personnel to review operation procedures, hazard prevention guidelines, the contingency and emergency response plans, safety equipment operation, etc. Two or more personnel should be involved in all HM/HW transfer and handling operations to provide assistance in the event of an emergency. This "buddy system" should be observed at all HM/HW facilities (i.e., DPDO, MCAS, Long Beach, Seal Beach, Tustin, and other activities).

6.3 COST ESTIMATE

Table 6.5 summarizes the cost estimate for construction of the conceptual facility. The proposed facility is a steel-framed masonry building. It is to be placed in the present DPDO lot 1. The existing asphalt pad in the area must be excavated in order to construct the foundation. An asphalt curb will be constructed around the loading area to contain potential spills.

The main loading dock is provided with dock levelers for truck loading and unloading. The electrical system and fixtures are explosion-proof and there is a backup generator to ensure that lighting and environmental controls can be maintained in the event of a power failure.

Exterior blow-out walls are specified for the flammable storage bays, and the interior walls of these bays are designed to withstand an explosion. Furnishings are provided for the decontamination area, the offices, and the laboratory, and spill control and personnel safety equipment are provided. Two forklifts are provided for materials handling.

Table 6.5

Construction Cost Estimate Summary

	Item	Cost
1.	Foundation excavation and construction and floor slab construction and sealing	$ 140,460
2.	Structural steel frame and roof deck construction	$ 160,480
3.	General construction including roof finishing, masonry walls, blow-out walls, doors, ceilings, and painting	$ 280,260
4.	Heating, ventilation, and air conditioning	$ 72,440
5.	Explosion-proof electrical systems and fixtures	$ 123,320
6.	Decontamination facility plumbing, emergency shower and eyewash stations, and roof drainage system	$ 27,410
7.	Fire protection equipment including sprinkler system, detection and alarm system, and fire extinguishers	$ 58,230
8.	Miscellaneous equipment including dock levelers, lab equipment, furnishings, lockers, forklifts, spill control equipment, personnel safety equipment, and storage shelves and racks	$ 139,250
9.	Miscellaneous site work including utility hookup and paving	$ 35,500
	Subtotal	$1,037,350
10.	General contractor's overhead and profit (15 percent)	$ 155,600
	Subtotal	$1,270,000
11.	Contingency (25 percent)	$ 299,000
	Total	$1,492,000

APPENDIX A

AREA INSPECTION CHECKLISTS

WESTON

HM/HW STORAGE AREA INSPECTION CHECKLIST

Installation: EL TORO

Storage Area: 6 SATELLITE AREAS AT AIRCRAFT WINGS

Inspector: R. PETERSON Date: 7/19/83

Contact: JEFF SIMKO Tel. 714-651-2821

1. Siting

a. Floodplain Y (N) b. Adequate Vehicle Access (Y) N

c. Location: 1-6 - WILL REMAIN BLDGS ONCE CONSTRUCTED

☐ Near Personnel Living Quarters: NO Ft.

☐ Near Highly Populated Industrial Areas: NO 3,4,6,1,5 Ft.
2 → NEAR BLDG (50')

☐ No Adjacent Personnel Activities

2. Communications PERSONNEL MAY HAVE

a. Telephone Y (N) b. 2-way Radio Y (N)

c. PA System Y (N) d. Alarm: NONE Manual ☐ Automatic ☐

Summons Fire Co. ☐ Local Only ☐

3. Spill Containment COORDINATOR FOR EACH SITE

a. Spill Control Equipment
SPILL RESPONSE VEHICLE - HAVE SPECIALIZED KIT - JEFF SIMKO IS ON SCENE
Absorbent Material: NOT PLANNED
Shovels, Vac, Broom: " PUBLIC WORKS ASSISTS
Recovery Drums/Containers: "
Decon. Equipment: "

b. Storage Surface

Asphalt (Concrete) Cracks Y (N)

c. Curbed Area Sufficient to Retain 10% of Largest Container (Y) N

d. Elevated Area for Drums to Preclude Contact w/Spills Y (N)

e. Spill & Emergency Response Plan → WILL BE A NEW SPCCPLAN IS BEING WRITTEN Y N

f. Loading Area Controls (Storm Drains): _____ Y (N)

4. Security Systems

a. 24 hr. Surveillance CHECKED DAILY → JEFF CHECK BI WEEKLY Y (N) b. Danger Sign (Y) N

c. Facility Staff Hours: AS NEEDED

d. Barrier: Locked Building ☐ Fence & Gate ☒ LOCKED

5. Fire Suppression

a. Fire Extinguisher: Number NOT PLANNED Type WILL CHECK

b. Other: Fire Hose ☐ Automatic Sprinklers ☐ FIRE COMPANY

Foam Equip. ☐ No Smoking Signs ☒ → WILL BE DONE

6. Building Construction NA

a. Type of HW/HM Stored _____

b. Number of Stories _____

c. Exterior Construction Material _____

d. Interior Construction Material _____

e. Ventilation _____

f. Climate Control _____

g. Floor Drains Discharge _____

h. Auxilary Power Source _____

i. Aisle Space of Non-Combustible Barriers

- 3 feet to Access Doors, Windows, Standpipe Y N Partial
- 8 feet to Main Aisles Y N P
- 4 feet for Side Aisles Y N P
- 2 feet from Walls Y N P

j. Height of Storage Piles/Stacks _____

k. Segregation of Waste Types _____

7. Building Storage Area Layout

- Indicate: Overall Building Dimensions, Area Used for HM/HW Storage, Windows & Door Locations, Aisleways, Location of Safety Features, Designated Storage Areas, Building Floor Plan, etc.

WESTON

8. Outdoor Storage

a. Type of HM/HW Stored SEE INVENTORY

b. Aisle Space → WILL TRY TO SEPARATE

- 5 Feet Between Materials Stored → AS POSSIBLE Y N P
- 20 Feet To Property Line 1-6 (Y) FOR ALL N P
- 10 Feet to Street 1-5 FEET OVER 10 Y N P
  2-5 FEET, 3-15 FEET, 4-70 FEET, 5-[illegible] FEET, 6-50 FEET

c. Non-combustible Barriers Y (N) N/A

d. Alarm-Communications Y (N) N/A

e. Elevated Area for Drums to Prevent Contact w/spills Y (N)

f. Danger Sign (Y) N

g. Security Fence (Y) N

h. Storage Surface: Cracks Y (N)

Asphalt ☐ Concrete ☒

i. Fire & Safety Equipment: WILL REQUIRE FIRE EXTINGUISHER

j. Drains: NO

k. Spill Containment Devices: CURBS

l. Lighting: NONE

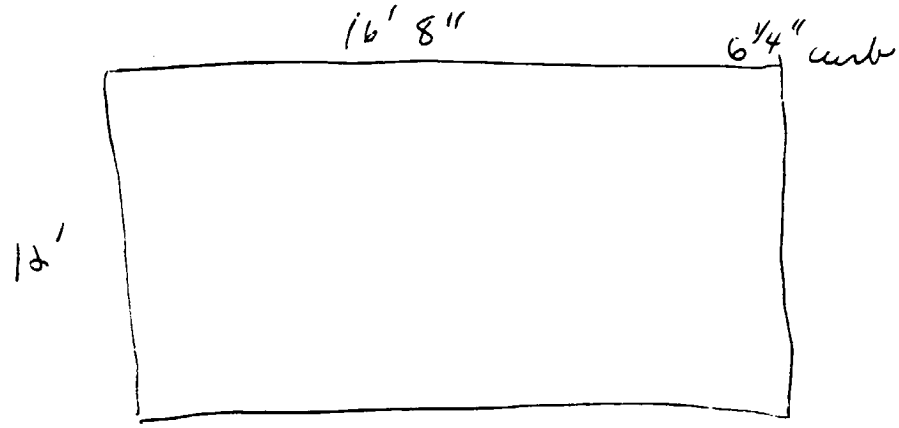
m. Segregation of Waste Types: AS POSSIBLE

n. Height of Piles/Stacks: TRY NOT TO → 2 MAX

CORRUGATED ROOF

9. Outdoor Storage Area Layout

- Indicate: Dimensions, aisleways, designated storage areas, berms, fencing, fire equipment, roadways, adjacent buildings, etc.



9'6" TO ROOF → METAL DECK

10. Electrical Systems

a. Explosion Proof Enclosures	Y	N
b. Safety Wiring	Y	N
c. Seals for Conduit Systems	Y	N
d. Protected Lighting Fixtures	Y	N
e. Equipment Grounding	Y	N

11. Safety

a. Eye Wash Station	(Y) → WILL BE REQUIRED	N
b. Emergency Shower	Y	(N)
c. Emergency Breathing Apparatus	Y	(N) → ON TRUCK
d. Personnel Training Program	(Y) → HAS BEEN INITIATED	N

e. Protective Clothing: IN TRUCK → PERSONNEL WILL BE SUPPLIED WITH

12. Recordkeeping

a. Inspections	(Y) → DAILY COORDINATOR WEEKLY → BIWEEKLY AS POS	N
b. Personnel Training	(Y) → JUST STARTED	N
c. Container Labeling	(Y) → BEFORE ACCEPTED	N P
d. HM/HW Types & Quantities	(Y) → WILL KEEP INVENTORY OFF WHAT IS THERE	N
e. Incident/Response Reports	(Y)	N
f. Safety Equipment Inspections	(Y) → EQUIP ON TRUCK	N

WESTON

HM/HW STORAGE AREA INSPECTION CHECKLIST

Installation: MCAS - EL TORO

Storage Area: DPDO

Inspector: R. PETERSON Date: 7/19/83

Contact: JOHN L. ROGERS, JR. Tel. _____

1. Siting

a. Floodplain Y (N) b. Adequate Vehicle Access (Y) N

c. Location: BLDG 319

☐ Near Personnel Living Quarters: NO Ft.

☐ Near Highly Populated Industrial Areas: NO Ft.

☒ No Adjacent Personnel Activities

2. Communications

a. Telephone (Y) N b. 2-way Radio Y (N)

c. PA System Y (N) d. Alarm: NO Manual ☐ Automatic ☐

Summons Fire Co. ☐ Local Only ☐

3. Spill Containment

a. Spill Control Equipment

Absorbent Material: NO → JEFF TRUCK

Shovels, Vac, Broom: NO

Recovery Drums/Containers: NO

Decon. Equipment: NO

b. Storage Surface

Asphalt (Concrete) Cracks MINOR Y N

c. Curbed Area Sufficient to Retain 10% of Largest Container Y (N)

d. Elevated Area for Drums to Preclude Contact w/Spills Y (N)

e. Spill & Emergency Response Plan JEFF'S PLAN Y N

f. Loading Area Controls (Storm Drains): _____ Y (N)

4. Security Systems

a. 24 hr. Surveillance Y (N) b. Danger Sign Y (N)

c. Facility Staff Hours: 7:00-3:30

d. Barrier: Locked Building ☒ Fence & Gate ☐

5. Fire Suppression

a. Fire Extinguisher: Number YES 6-8 Type NOT FOR EZE FIRES

b. Other: Fire Hose NO ☐ Automatic Sprinklers ☒

Foam Equip. NO ☐ No Smoking Signs ☒

6. Building Construction

a. Type of HW/HM Stored _____

b. Number of Stories 1

c. Exterior Construction Material MASONRY

d. Interior Construction Material WOOD FRAMED

e. Ventilation NOTHING SPECIAL

f. Climate Control NONE

g. Floor Drains Discharge NO

h. Auxilary Power Source NO

i. Aisle Space of Non-Combustible Barriers NA

- 3 feet to Access Doors, Windows, Standpipe Y N Partia
- 8 feet to Main Aisles Y N P
- 4 feet for Side Aisles Y N P
- 2 feet from Walls Y N P

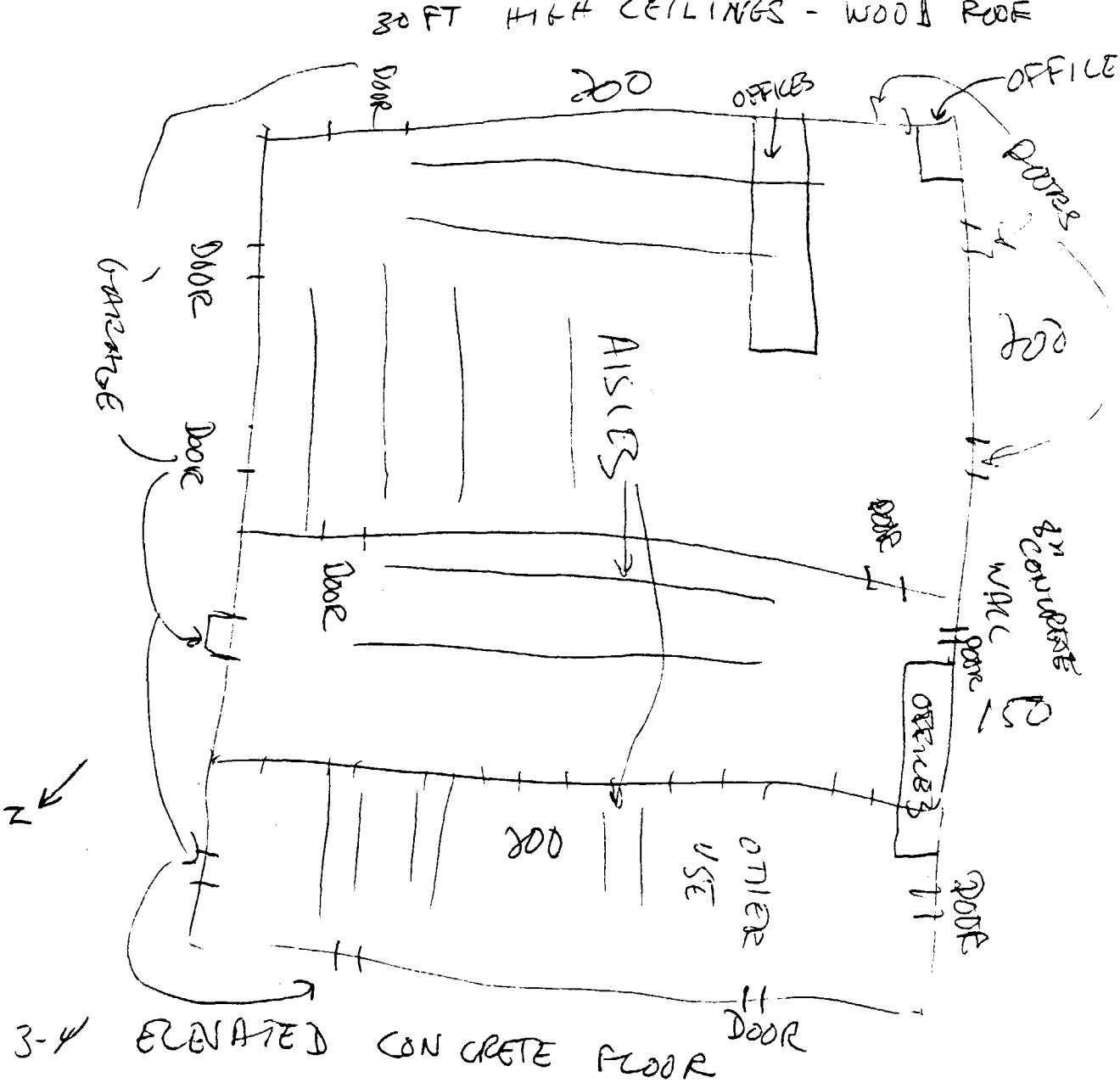
j. Height of Storage Piles/Stacks 3-4 PALLET RACKS

k. Segregation of Waste Types NA

POOR LIGHTING

7. Building Storage Area Layout

- Indicate: Overall Building Dimensions, Area Used for HM/HW Storage, Windows & Door Locations, Aisleways, Location of Safety Features, Designated Storage Areas, Building Floor Plan, etc.



8. Outdoor Storage SEE LOT 1

a. Type of HM/HW Stored _____

_____

b. Aisle Space

- 5 Feet Between Materials Stored Y N P
- 20 Feet To Property Line Y N P
- 10 Feet to Street Y N P

c. Non-combustible Barriers Y N N/A

d. Alarm-Communications Y N N/A

e. Elevated Area for Drums to Prevent Contact w/spills Y N

f. Danger Sign Y N

g. Security Fence Y N

h. Storage Surface: Cracks Y N

Asphalt ☐ Concrete ☐

i. Fire & Safety Equipment: _____

j. Drains: _____

k. Spill Containment Devices: _____

l. Lighting: _____

m. Segregation of Waste Types: _____

_____

n. Height of Piles/Stacks: _____

9. Outdoor Storage Area Layout

- Indicate: Dimensions, aisleways, designated storage areas, berms, fencing, fire equipment, roadways, adjacent buildings, etc.

10. Electrical Systems

a.	Explosion Proof Enclosures	Y	(N)
b.	Safety Wiring	Y	(N)
c.	Seals for Conduit Systems	Y	(N)
d.	Protected Lighting Fixtures	Y	(N)
e.	Equipment Grounding	Y	(N)

11. Safety

a.	Eye Wash Station	Y	(N)
b.	Emergency Shower	Y	(N)
c.	Emergency Breathing Apparatus	Y	(N)
d.	Personnel Training Program	Y	N
e.	Protective Clothing: NONE		

12. Recordkeeping N/A

a.	Inspections	Y	N	
b.	Personnel Training	Y	N	
c.	Container Labeling	Y	N	P
d.	HM/HW Types & Quantities	Y	N	
e.	Incident/Response Reports	Y	N	
f.	Safety Equipment Inspections	Y	N	

WESTON

HM/HW STORAGE AREA INSPECTION CHECKLIST

Installation: DRDO EL TORO

Storage Area: LOT # 1 + 2

Inspector: JAG Date: _____

Contact: _____ Tel. _____

1. Siting

a. Floodplain Y (N) b. Adequate Vehicle Access (Y) N

c. Location: OUTDOORS

☐ Near Personnel Living Quarters: _____ Ft.

☐ Near Highly Populated Industrial Areas: _____ Ft.

☒ No Adjacent Personnel Activities

2. Communications

a. Telephone Y (N) b. 2-way Radio Y (N)

c. PA System Y (N) d. Alarm: NONE Manual ☐ Automatic ☐

Summons Fire Co. ☐ Local Only ☐

3. Spill Containment NONE

a. Spill Control Equipment

Absorbent Material: _____

Shovels, Vac, Broom: _____

Recovery Drums/Containers: _____

Decon. Equipment: _____

b. Storage Surface

(Asphalt) Concrete Cracks (Y) N

c. Curbed Area Sufficient to Retain 10% of Largest Container Y (N)

d. Elevated Area for Drums to Preclude Contact w/Spills (Y) N

e. Spill & Emergency Response Plan SEE EL TORO Y N

f. Loading Area Controls (Storm Drains): NO Y N

4. Security Systems

a. 24 hr. Surveillance Y (N) b. Danger Sign Y (N)

c. Facility Staff Hours: 0700 - 1530

d. Barrier: Locked Building ☐ Fence & Gate ☒ LOCKED

5. Fire Suppression

a. Fire Extinguisher: NONE Number _____ Type _____

b. Other: Fire Hose ☐ Automatic Sprinklers ☐

Foam Equip. ☐ No Smoking Signs ☐

6. Building Construction

a. Type of HW/HM Stored _____

b. Number of Stories _____

c. Exterior Construction Material _____

d. Interior Construction Material _____

e. Ventilation _____

f. Climate Control _____

g. Floor Drains Discharge _____

h. Auxilary Power Source _____

i. Aisle Space of Non-Combustible Barriers

- 3 feet to Access Doors, Windows, Standpipe Y N Partial
- 8 feet to Main Aisles Y N P
- 4 feet for Side Aisles Y N P
- 2 feet from Walls Y N P

j. Height of Storage Piles/Stacks _____

k. Segregation of Waste Types _____

7. Building Storage Area Layout

- Indicate: Overall Building Dimensions, Area Used for HM/HW Storage, Windows & Door Locations, Aisleways, Location of Safety Features, Designated Storage Areas, Building Floor Plan, etc.

8. Outdoor Storage

a. Type of HM/HW Stored _____

_____

b. Aisle Space

- 5 Feet Between Materials Stored (Y) N P
- 20 Feet To Property Line (Y) N P
- 10 Feet to Street (Y) N P

c. Non-combustible Barriers Y (N) N/A

d. Alarm-Communications Y (N) N/A

e. Elevated Area for Drums to Prevent Contact w/spills (Y) N PALLETS

f. Danger Sign Y (N)

g. Security Fence (Y) N

h. Storage Surface: Cracks (Y) N

Asphalt ☒ Concrete ☐

i. Fire & Safety Equipment: NONE

j. Drains: NONE

k. Spill Containment Devices: MOBILE VAN

l. Lighting: ~~N/A~~ YES, STREETLIGHTS

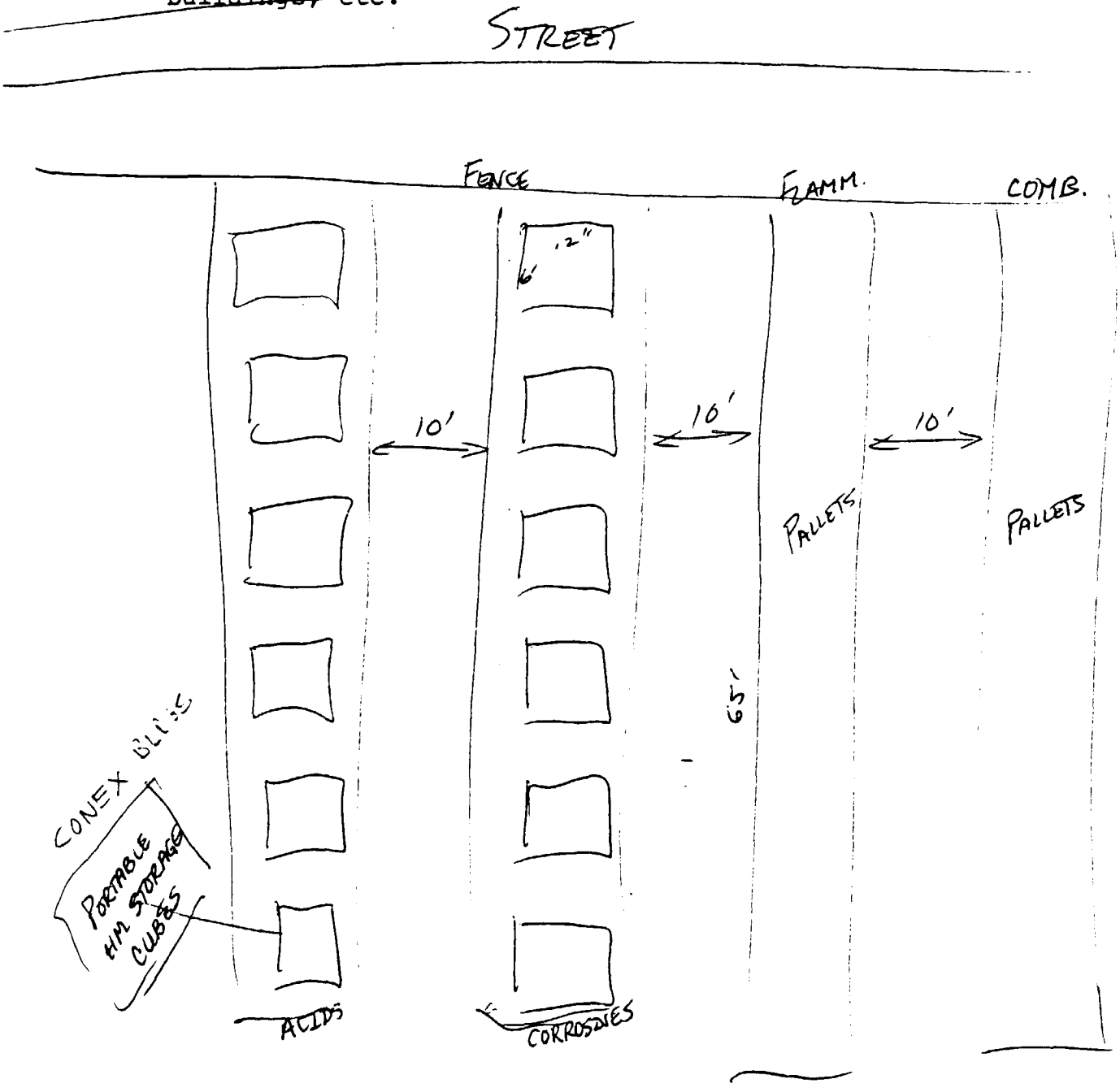
m. Segregation of Waste Types: YES

_____

n. Height of Piles/Stacks: ~~N/A~~ NO STACKING UNLESS SPACE REQ.

9. Outdoor Storage Area Layout

- Indicate: Dimensions, aisleways, designated storage areas, berms, fencing, fire equipment, roadways, adjacent buildings, ~~buildings, etc.~~



2A-TYPE
LTR CAR
BC-TYPE
2016

10. Electrical Systems

a.	Explosion Proof Enclosures	Y	(N)
b.	Safety Wiring	Y	(N)
c.	Seals for Conduit Systems	Y	(N)
d.	Protected Lighting Fixtures	Y	(N)
e.	Equipment Grounding	Y	(N)

11. Safety

a.	Eye Wash Station	(Y)	N
b.	Emergency Shower	Y	(N)
c.	Emergency Breathing Apparatus	Y	(N)
d.	Personnel Training Program	(Y)	N
e.	Protective Clothing: No		

12. Recordkeeping

a.	Inspections	(Y)	N	
b.	Personnel Training	(Y)	N	
c.	Container Labeling	(Y)	N	P
d.	HM/HW Types & Quantities	(Y)	N	
e.	Incident/Response Reports	(Y)	N	
f.	Safety Equipment Inspections	(Y)	N	

WESTON

HM/HW STORAGE AREA INSPECTION CHECKLIST

Installation: MCAS(H)-TUSTIN (LTA) (slightly thru Air)

Storage Area: HW Storage area

Inspector: R Peterson Date: 7/19/83

Contact: JEFF SIMKO Tel. 714-651-2821

1. Siting

a. Floodplain Y (N) b. Adequate Vehicle Access (Y) N

c. Location:

☐ Near Personnel Living Quarters: NO Ft.

☐ Near Highly Populated Industrial Areas: NEAR A HANGAR Ft.

☐ No Adjacent Personnel Activities

2. Communications

a. Telephone (Y) N b. 2-way Radio Y (N)

c. PA System Y (N) d. Alarm: NONE Manual ☐ Automatic ☐

Summons Fire Co. ☐ Local Only ☐

3. Spill Containment

a. Spill Control Equipment

Absorbent Material: YES

Shovels, Vac, Broom: SHOVELS, VACUUM TRUCK

Recovery Drums/Containers: YES

Decon. Equipment: TRUCK

b. Storage Surface

Asphalt (Concrete) Cracks Y (N)

c. Curbed Area Sufficient to Retain 10% of Largest Container (Y) N

d. Elevated Area for Drums to Preclude Contact w/Spills Y (N)

e. Spill & Emergency Response Plan — WILL BE DONE — Y N

f. Loading Area Controls (Storm Drains): _____ Y (N)

4. Security Systems

a. 24 hr. Surveillance — RECOMMEND / AS NEEDED — Y N

b. Danger Sign — WILL BE — (Y) N

c. Facility Staff Hours: AS NEEDED

d. Barrier: Locked Building ☒ Fence & Gate ☐

5. Fire Suppression

a. Fire Extinguisher: Number WILL BE REQUIRED Type _____

b. Other: Fire Hose ☐ NO Automatic Sprinklers ☐ NO

Foam Equip. ☐ NO No Smoking Signs ☐

FIRE DEPT AT TUSTIN WILL BE REQUIRED

6. Building Construction

a. Type of HW/HM Stored SEE INVENTORY

b. Number of Stories 1

c. Exterior Construction Material CONCRETE MASONRY

d. Interior Construction Material " "

e. Ventilation 5 ROOF VENTILATORS - 2 POWERED - FLOOR VENTS

f. Climate Control NONE

g. Floor Drains Discharge NONE

h. Auxilary Power Source _____

i. Aisle Space of Non-Combustible Barriers

- 3 feet to Access Doors, Windows, Standpipe (Y) N Partial
- 8 feet to Main Aisles (Y) N P
- 4 feet for Side Aisles AS POSSIBLE Y N P
- 2 feet from Walls Y N P

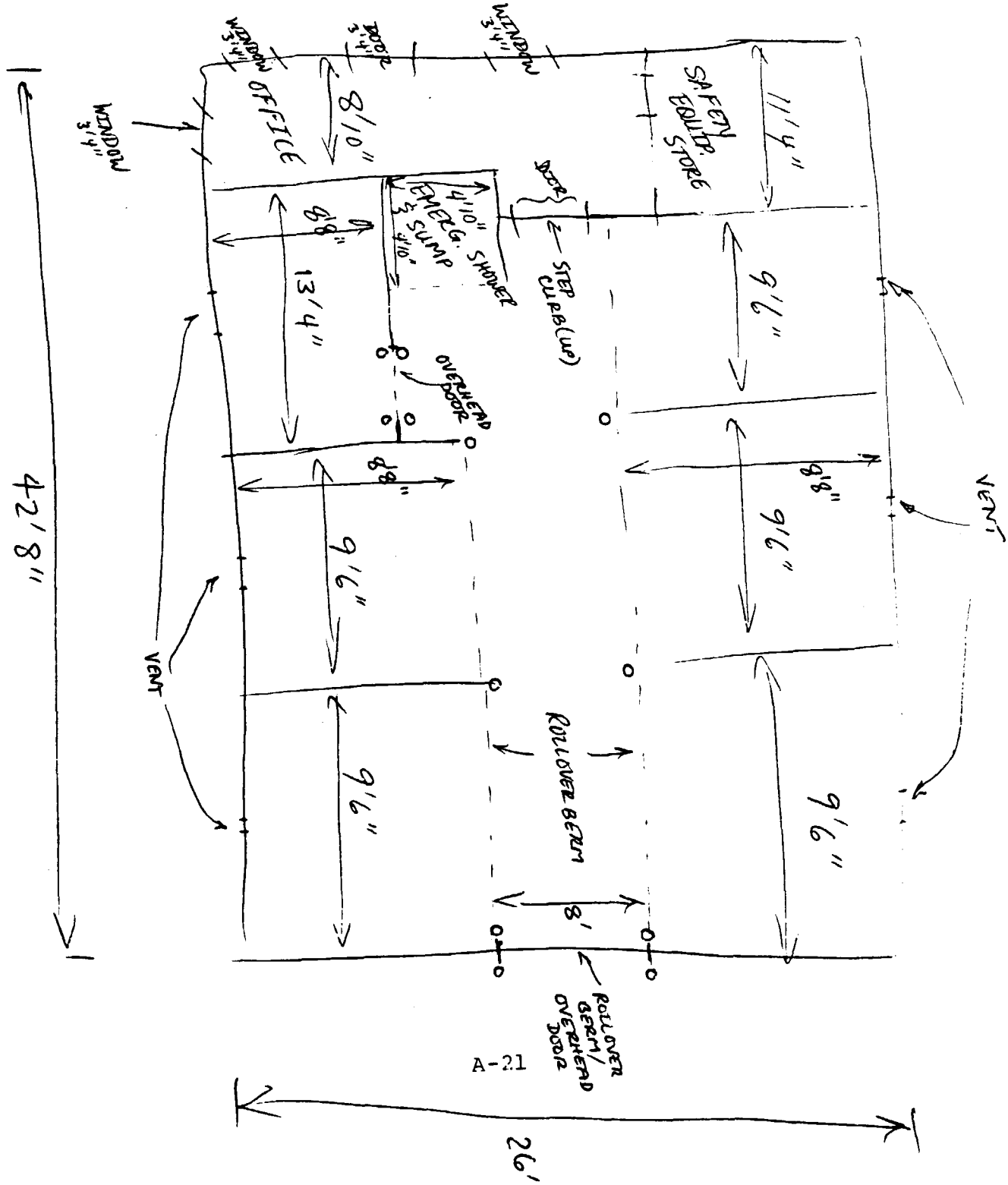
j. Height of Storage Piles/Stacks NO

k. Segregation of Waste Types YES

WESTON

7. Building Storage Area Layout

- Indicate: Overall Building Dimensions, Area Used for HM/HW Storage, Windows & Door Locations, Aisleways, Location of Safety Features, Designated Storage Areas, Building Floor Plan, etc.



8. Outdoor Storage NONE

a. Type of HM/HW Stored _____

_____

b. Aisle Space

- 5 Feet Between Materials Stored Y N P
- 20 Feet To Property Line Y N P
- 10 Feet to Street Y N P

c. Non-combustible Barriers Y N N/A

d. Alarm-Communications Y N N/A

e. Elevated Area for Drums to Prevent Contact w/spills Y N

f. Danger Sign Y N

g. Security Fence Y N

h. Storage Surface: Cracks Y N

Asphalt ☐ Concrete ☐

i. Fire & Safety Equipment: _____

j. Drains: _____

k. Spill Containment Devices: _____

l. Lighting: _____

m. Segregation of Waste Types: _____

_____

n. Height of Piles/Stacks: _____

9. Outdoor Storage Area Layout

- Indicate: Dimensions, aisleways, designated storage areas, berms, fencing, fire equipment, roadways, adjacent buildings, etc.

EMERGENCY SHOWER + EYEWASH

3 - m WEST + EAST SIDES (VENTILATION DUCTS)

10. Electrical Systems

a. Explosion Proof Enclosures	(Y)	N	
b. Safety Wiring	(Y)	N	
c. Seals for Conduit Systems	(Y)	N	
d. Protected Lighting Fixtures	(Y)	N	
e. Equipment Grounding	Y	(N)	NO EQUIPMENT USED.

11. Safety

a. Eye Wash Station	(Y)	N	
b. Emergency Shower	(Y)	N	
c. Emergency Breathing Apparatus	(Y)	N	RESPIRATORS - SCBA SPILL RESP. TRUCK
d. Personnel Training Program	Y	(N)	WILL BE

e. Protective Clothing: YES IN STORAGE ROOM

12. Recordkeeping

a. Inspections	(Y)	N	
b. Personnel Training	(Y)	N	
c. Container Labeling	(Y)	N	P
d. HM/HW Types & Quantities	(Y)	N	
e. Incident/Response Reports	(Y)	N	
f. Safety Equipment Inspections	(Y)	N	

NEW PCB TRANSFORMER FACILITY

WESTON

HM/HW STORAGE AREA INSPECTION CHECKLIST

Installation: Long Beach

Storage Area: Hazardous Waste Area

Inspector: R Peterson Date: 7/20/83

Contact: D. C. Makuna Tel. _____

1. Siting

a. Floodplain Y (N) b. Adequate Vehicle Access (Y) N

c. Location: _____

☐ Near Personnel Living Quarters: NO Ft.

☐ Near Highly Populated Industrial Areas: YES Ft.

☐ No Adjacent Personnel Activities

2. Communications

a. Telephone Y (N) b. 2-way Radio (Y) → in personnel N

c. PA System Y (N) d. Alarm: → Manual ☐ in upgrade Automatic ☐

Summons Fire Co. ☐ Local Only ☐

3. Spill Containment

a. Spill Control Equipment

Absorbent Material: YES OIL DRY, SORBIT ETC.

Shovels, Vac, Broom: ON TRUCK

Recovery Drums/Containers: YES

Decon. Equipment: DECON KEROSCENE SOLUTION

b. Storage Surface

Asphalt (Concrete) Cracks Y (N)

c. Curbed Area Sufficient to Retain 10% of Largest Container Y → NO DESIGN (N)

d. Elevated Area for Drums to Preclude Contact w/Spills Y (N)

e. Spill & Emergency Response Plan (Y) N

f. Loading Area Controls (Storm Drains): _____ Y (N)

4. Security Systems

a. 24 hr. Surveillance Y (N) b. Danger Sign (Y) N

c. Facility Staff Hours: 0800 - 300

d. Barrier: (Locked) Building ☐ (Fence) & Gate ☐

5. Fire Suppression

a. Fire Extinguisher: Number 4 Type _____

b. Other: Fire Hose NO ☐ Automatic Sprinklers NO ☐

Foam Equip NO ☐ No Smoking Signs ☒

6. Building Construction

a. Type of HW/HM Stored _____

b. Number of Stories 1

c. Exterior Construction Material CORRUGATED

d. Interior Construction Material "

e. Ventilation GOOD → NANRAL

f. Climate Control NONE

g. Floor Drains Discharge NONE

h. Auxilary Power Source NONE

i. Aisle Space of Non-Combustible Barriers

- 3 feet to Access Doors, Windows, Standpipe Y N Partial
- 8 feet to Main Aisles Y N P
- 4 feet for Side Aisles Y N P
- 2 feet from Walls Y N P

j. Height of Storage Piles/Stacks 1 HIGH

k. Segregation of Waste Types YES

7. Building Storage Area Layout

- Indicate: Overall Building Dimensions, Area Used for HM/HW Storage, Windows & Door Locations, Aisleways, Location of Safety Features, Designated Storage Areas, Building Floor Plan, etc.

8. Outdoor Storage

a. Type of HM/HW Stored SEE INVENT.

b. Aisle Space

- 5 Feet Between Materials Stored	Y	N	P
- 20 Feet To Property Line	Y	N	P
- 10 Feet to Street	Y	N	P

c. Non-combustible Barriers — Y (N) N/A

d. Alarm-Communications — Y (N) N/A

e. Elevated Area for Drums to Prevent Contact w/spills — Y (N)

f. Danger Sign — (Y) N

g. Security Fence — (Y) N

h. Storage Surface: Cracks — Y (N)

Asphalt ☐ Concrete ☒

i. Fire & Safety Equipment: EXTINGUISHERS

j. Drains: NONE

k. Spill Containment Devices: NO

l. Lighting: NATURAL

m. Segregation of Waste Types: YES

n. Height of Piles/Stacks: /

9. Outdoor Storage Area Layout

- Indicate: Dimensions, aisleways, designated storage areas, berms, fencing, fire equipment, roadways, adjacent buildings, etc.

WESTON

10. Electrical Systems SEE NEW PLANS

a. Explosion Proof Enclosures	Y	N	
b. Safety Wiring	Y	N	
c. Seals for Conduit Systems	Y	N	
d. Protected Lighting Fixtures	Y	N	
e. Equipment Grounding	Y	N	

11. Safety

a. Eye Wash Station	(Y)	N	
b. Emergency Shower	(Y)	N	
c. Emergency Breathing Apparatus	Y	(N)	ON TRUCK
d. Personnel Training Program	(Y)	N	
e. Protective Clothing: YES CARRY			

12. Recordkeeping

a. Inspections	(Y)	N	LOGS → DAILY
b. Personnel Training	(Y)	N	
c. Container Labeling	(Y)	N	P
d. HM/HW Types & Quantities	Y	N	SEE INVENT
e. Incident/Response Reports	(Y)	N	
f. Safety Equipment Inspections	(Y)	N	

WESTON
DESIGNERS CONSULTANTS

BY ~~JAG~~ DATE 7/20/83 DIV _____ SHEET _____ OF _____

CHKD BY _____ DATE _____ DEPT _____ W.O. NO. _____

PROJECT _____

SUBJECT HW STOR. FAC. - LONG BEACH

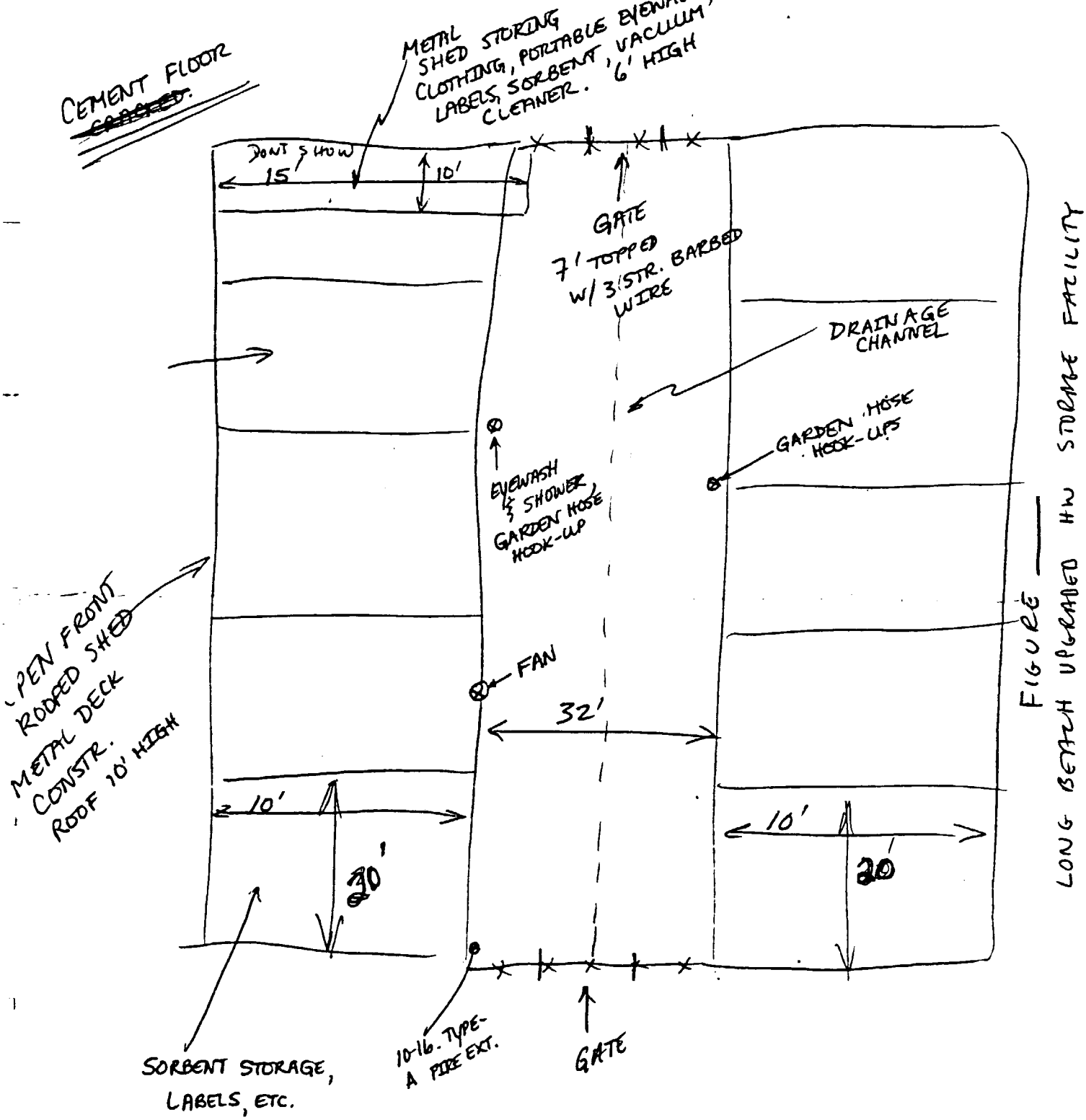


FIGURE ___ LONG BEACH UPGRADED HW STORAGE FACILITY

~~D. C. MAKAENA~~

WESTON

HM/HW STORAGE AREA INSPECTION CHECKLIST

Installation: Seal Beach

Storage Area: Bldg 38

Inspector: R Peterson Date: 7/28/83

Contact: _____ Tel. _____

1. Siting

a. Floodplain Y (N) b. Adequate Vehicle Access (Y) N

c. Location: _____

☐ Near Personnel Living Quarters: NO Ft.

☐ Near Highly Populated Industrial Areas: NO Ft.

☐ No Adjacent Personnel Activities

2. Communications

a. Telephone Y (N) (WILL HAVE) b. 2-way Radio Y (N)

c. PA System Y (N) d. (Alarm:) (NONE) Manual ☐ Automatic ☐

(WILL HAVE) Summons Fire Co. ☐ Local Only ☐

3. Spill Containment

a. Spill Control Equipment

Absorbent Material: NONE

Shovels, Vac, Broom: _____

Recovery Drums/Containers: _____

Decon. Equipment: _____

b. Storage Surface

Asphalt (Concrete) Cracks Y N

c. Curbed Area Sufficient to Retain 10% of Largest Container Y N

d. Elevated Area for Drums to Preclude Contact w/Spills Y N

e. Spill & Emergency Response Plan Y (N)

f. Loading Area Controls (Storm Drains): _____ Y N

4. Security Systems

a. 24 hr. Surveillance Y N b. Danger Sign Y N

c. Facility Staff Hours: AS NEEDED

d. Barrier: Locked Building ☒ Fence & Gate ☐

5. Fire Suppression

a. Fire Extinguisher: Number _____ Type _____

b. Other: Fire Hose ☐ Automatic Sprinklers ☐

Foam Equip. ☐ No Smoking Signs ☐

6. Building Construction

a. Type of HW/HM Stored ~~CONCRETE~~

b. Number of Stories _____

c. Exterior Construction Material CONCRETE

d. Interior Construction Material "

e. Ventilation POSITIVE

f. Climate Control NO

g. Floor Drains Discharge → DRAIN TO SUMP

h. Auxilary Power Source NO

i. Aisle Space of Non-Combustible Barriers

- 3 feet to Access Doors, Windows, Standpipe Y N Partia
- 8 feet to Main Aisles Y N P
- 4 feet for Side Aisles Y N P
- 2 feet from Walls Y N P

j. Height of Storage Piles/Stacks _____

k. Segregation of Waste Types _____

7. Building Storage Area Layout SEE DRAWINGS

- Indicate: Overall Building Dimensions, Area Used for HM/HW Storage, Windows & Door Locations, Aisleways, Location of Safety Features, Designated Storage Areas, Building Floor Plan, etc.

LIGHTS, SUMPS
POSITIVE VENTILATION
NO CLIMATE CONTROL

8. Outdoor Storage SEE DRAWINGS

a. Type of HM/HW Stored _____

_____

b. Aisle Space

- 5 Feet Between Materials Stored Y N P
- 20 Feet To Property Line Y N P
- 10 Feet to Street Y N P

c. Non-combustible Barriers Y N N/A

d. Alarm-Communications Y N N/A

e. Elevated Area for Drums to Prevent Contact w/spills Y N

f. Danger Sign Y N

g. Security Fence Y N

h. Storage Surface: Cracks Y N

Asphalt ☐ Concrete ☐

i. Fire & Safety Equipment: _____

j. Drains: _____

k. Spill Containment Devices: _____

l. Lighting: _____

m. Segregation of Waste Types: _____

_____

n. Height of Piles/Stacks: _____

9. Outdoor Storage Area Layout

- Indicate: Dimensions, aisleways, designated storage areas, berms, fencing, fire equipment, roadways, adjacent buildings, etc.

SEE DRAWINGS

10. Electrical Systems NO

a.	Explosion Proof Enclosures	Y	(N)
b.	Safety Wiring	Y	(N)
c.	Seals for Conduit Systems	Y	(N)
d.	Protected Lighting Fixtures	Y	(N)
e.	Equipment Grounding	Y	(N)

11. Safety

a.	Eye Wash Station	(Y)	N
b.	Emergency Shower	(Y)	N
c.	Emergency Breathing Apparatus	Y	N
d.	Personnel Training Program	Y	N
e.	Protective Clothing: _____		

12. Recordkeeping

a.	Inspections	(Y)	N	
b.	Personnel Training	(Y)	N	
c.	Container Labeling	(Y)	N	P
d.	HM/HW Types & Quantities	Y	N	
e.	Incident/Response Reports	(Y)	N	
f.	Safety Equipment Inspections	(Y)	N	

APPENDIX B

DLA CONFORMING STORAGE CHECKLIST

	Evaluation Criteria	Interim	Final	Numberical Rating	Interim	Final	Numberical Rating	Notes
I	Siting							
	40 CFR 264.18(b)	N/A			N/A			
II	Communication							
	40 CFR 264.32 & 265.32			0			0	
III	Spill Containment							1. STORAGE AND TIRES CONTAINED CURB. [illegible] STORAGE AREAS
	40 CFR 264.31 & 265.31	✓		1	✓		1	2. STORAGE PILE [illegible]
	40 CFR 264.32(c) & 265.32(c)			0	✓		1	
	40 CFR 264.175 (a)	N/A			N/A			
IV	Security Systems							1.a. LOT #1 DOES [illegible]
	40 CFR 264.14(b) & 265.14(b)	✓		1	✓		1	
	40 CFR 264.14(c) & 264.14(c)			0	✓		1	b. [illegible] BUT LIMITED TO
V	Fire Suppression							1. NO [illegible]
	40 CFR 264.32(c) & 265.32(c)	✓		0	✓		1	2. NO FIRE [illegible] DOES HAVE [illegible]
	40 CFR 264.32(d) & 265.32(d)			0			0	
*VI	Type of Construction							
	DoD 4145.19-R-1 (5-404)			0			0*	
	DoD 4145.19-R-1 (5-406)			0			0*	
VII	Separation System							1. [illegible]
	DoD 4145.19-R-1 (5-404)	✓		2	✓		1	2. SIZE [illegible]
	DoD 4145.19-R-1 (5-406)	✓		1			0	
	DoD 4145.19-R-1 Tables 5-1 & 5-3	✓		2			0	
*VIII	Electrical System							
	DoD 4145.19-R-1 (5-404)			0			0*	
	DoD 4145.19-R-1 (5-406)			0			0*	
IX	Illumination							1. [illegible]
	All.1-1973	✓		2	✓		1	
X	Fixed Eye Wash & Shower							1. [illegible]
	29 CFR 1910.151(c)	✓		1	✓		1	

* Not applicable to outside storage facilities. NOTE: When comparing outside storage to inside storage assign equal [illegible] outside [illegible] make comparison

APPENDIX C

JOINT-USE/SINGLE-USE COST COMPARISON

APPENDIX C

JOINT-USE/SINGLE-USE COST COMPARISON

Item	Estimated Construction Cost[1]
El Toro proposed joint-use facility	$1,190,000
17,200 sq ft at $69/sq ft	
Tustin DPDO single-use facility	
12,300 sq ft x $69/sq ft	$ 849,000
Less cost for laboratory equipment	-10,000
	$ 839,000
El Toro MCAS single-use storage facility	
5,600 sq ft x $69/sq ft	$ 386,000
Total cost for two single-use facilities	$1,225,000

[1]Construction cost estimates do not include contingency.

Note: This is an increase of 3 percent over a joint-use facility. Operating costs that would increase with separate facilities may include additional personnel and transport costs.

APPENDIX D

FORM 1391

1. COMPONENT	FY 19 87 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
Defense (DLA)		

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
El Toro Marine Corps Air Station El Toro, California	Hazardous Material/ Hazardous Waste Storage Facility

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
	442-452		1500

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT COST	COST ($000)
Hazardous Waste Storage Facility	SF	17,200	33.8	581
Supporting Facilities	-	-	-	456
Electrical Utilities	LS	-	-	(196)
Mechanical Utilities	LS	-	-	(85)
Site Improvement	LS	-	-	(36)
Equipment	LS	-	-	(139)
Subtotal	-	-	-	1037
Gen. Contractor O/H & P (15%)	-	-	-	156
Subtotal	-	-	-	1193
Contingency (25%)	-	-	-	299
Total Request				1492
Total Request (Rounded)				1500

10. DESCRIPTION OF PROPOSED CONSTRUCTION

Construction on this project will consist of construction of a metal framed, concrete block building with a concrete foundation, pavement for access road and parking lot, acid, caustic and solvent resistant floors with spill collection trenches, concrete block interior walls (some fire rated) and partitions, blowout walls in flammable storage areas, explosion-proof electrical system, fire sprinkler and detection and alarm systems, heating and air conditioning in ancillary areas, mechanical ventilation in storage areas, material handling equipment, emergency, spill response and personnel safety equipment, and laboratory, office and personnel decontamination facilities with related equipment.

1. COMPONENT	FY 1987 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
Defense (DLA)		

3. INSTALLATION AND LOCATION

El Toro Marine Corps Air Station
El Toro, California

4. PROJECT TITLE	5. PROJECT NUMBER
Hazardous Material/Waste Storage Facility	

11. REQUIREMENT: 17,200 SF. ADEQUATE: 0 SUBSTANDARD: 0

PROJECT: This MILCON project provides a 17,200 square foot joint MCAS and DPDO facility for storage of hazardous wastes including flammables, acids, oxidizing agents and caustics, toxics, PCB's and other miscellaneous materials.

REQUIREMENT: The Marine Corps Air Station and Area DPDO is presently dependent upon a handling and storage systems for hazardous wastes (HW) that do not satisfy DEQPPM81-3 Conforming Storage requirements. Other regulations that address hazardous waste handling and storage requirements include the Environmental Protection Agency's Resource Conservation and Recovery Act, California State HW regulations (Title 22), NAVFAC HW Storage and Transfer Facilities Design Criteria and Department of Defense Chemical and Flammable Storage Facility Design Standards. These regulations require segregation of incompatible chemical materials, provisions for spill containment, alarm and sprinkler systems, and many other safety and security related features. The MCAS is responsible for collection and packaging of HW before transfer to the area DPDO. The DPDO is responsible for disposal of HW. Both the MCAS and base DPDO require properly designed indoor HW storage facilities for providing these services. This facility will also contain a working laboratory for chemical analysis to insure proper handling, packaging and disposal. In addition it will provide office and storage space for the resident personnel and decontamination facilities for personnel who handle the HW stored at the facility. No facility presently exists at this base that meets these requirements.

CURRENT SITUATION: Hazardous Materials/Wastes are presently stored in an open lot at the base DPDO which has no protection from the elements, no segregation or spill control devices and minimal emergency response equipment. The MCAS presently stores HW generated by its activities at six concrete pads. These pads are covered but have no walls, so minimal isolation from the elements is afforded. These pads also provide no segregation for incompatible materials and minimal emergency response equipment. Indoor storage for the MCAS generated HW is also required for personnel and environmental safety reasons in addition to regulatory reasons. The other activities which the El Toro DPDO is responsible for include the Seal Beach Naval Weapons Station, the Long Beach Naval Shipyard and the Tustin Marine Corps Air Station (Helicopter). Conforming storage for the HM/HW is available at the Long Beach

1. COMPONENT	FY 19 87 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
Defense (DLA)		

3. INSTALLATION AND LOCATION

El Toro Marine Corps Air Station
El Toro, California

4. PROJECT TITLE	5. PROJECT NUMBER
Hazardous Material/Waste Storage Facility	

and Tustin facilities and a new facility is planned for the Seal Beach facility. However, the HM stored at these facilities must be sent to the El Toro DPDO for sales. Because the existing facility is not conforming and poses a potential hazard to personnel and the environment, a new indoor facility is required at El Toro.

IMPACT IF NOT PROVIDED: The El Toro Marine Corps Air Station is a modern facility dedicated to the direct support of the Third Marine Air Wing. The other DPDO contributing activities Tustin, Long Beach and Seal Beach, provide vital services to the Marine Aircraft Group 16 (Helicopter) and the Navy. Many of the maintenance activities and industrial processes performed by these activities result in production of large quantities of hazardous waste including acids, caustics, toxics, PCB's and flammables. Construction of a properly designed control facility to store these wastes is the most effective way to protect base personnel and environment from a potentially catastrophic accident. In addition, non-compliance with Federal regulations on hazardous waste storage could result in fines of $25,000 per day per violation.

ADDITIONAL:

a. An economic analysis is not required for this project because it is required by federal and state regulations and for personnel and environmental safety reasons.

b. This project is consistent with the anticipated tenure of DPDO El Toro and geographical area DoD generating activities.

c. The proposed site is not within a 100 year flood plain or an area which suggests the presence of a seismic fault.

d. Provisions for the handicapped are not applicable to this project.

e. This project will result in small increases in the usage of electricity, water and fuel at the storage location.

WESTON Construction Cost Estimate	Date Prepared 2-20-84	Sheet 1 of 10
Project NAVFAC	Work Order No. 0628-05-16	
Subject EL TORO MCAS LONG TERM STORAGE FACILITY	Basis For Estimate CONCEPT	
Drawing No.	Estimator J. SMITH	Checked By R. PETERSON

Item Description	Quantity		Material		Labor	
ESTIMATE SUMMARY	No. Units	Unit Meas.	Per Unit	Total	Per Unit	Total
1. FND'S & FLOOR SLAB						140,460
2. STRUCT. STEEL & DECK						160,480
3. GENERAL CONSTRUCTION						280,260
4. HVAC						72,440
5. ELECTRICAL						123,320
6. PLUMBING						27,410
7. FIRE PROTECTION						58,230
8. EQUIPMENT						139,250
9. SITEWORK						35,500
SUB-TOTAL					$	1,037,350
GENERAL CONTRACTOR'S O/H & P	15%					155,600
TOTAL 1Q84 COST					$	1,193,000
CONTINGENCY	25%					298,000
TOTAL					$	1,491,000
	Sheet Total					

WESTON Construction Cost Estimate

Date Prepared: 2-20-84

Sheet 2 of 10

Project: NAVFAC

Work Order No.: 0628-05-16

Subject: EL TORO

Basis For Estimate: CONCEPT

Drawing No.:

Estimator: J. SMITH

Checked By: R. PETERSON

Item Description	Quantity		Material		Labor	
FOUNDATIONS AND FLOOR SLABS	No. Units	Unit Meas.	Per Unit	Total	Per Unit	Total
1. EXCAV. & B'FILL FOR FND'S AND LOW AREAS	L.S.			INCL.		7500
2. STRUCTURAL FILL				NOT REQ'D		-
3. BUILDING FND'S	150	C.Y.		INCL.	180	27,000
4. BUILDING FLOOR SLAB 14,570 SF. 6" THICK.	270	CY.			160	43,200
5. CONCRETE FOR DOCK LEVELLERS	2	EA			1500	3000
6. EPOXY SEALER FOR SPECIAL AREAS	6750	SF			1.00	6750
7. SPILL COLLECTION TRENCHES & COVERS, 2' DEEP	120	LF			163	19560
8. SUMP PITS (2'x2'x3' DP)	2	EA			1000	2000
9. CONCRETE RAMPS	180	SF			15	2700
10. CONCRETE STAIRS W/ H.R. AS REQ'D	2	EA			2000	4000
11. SPILL COLLECTION TRENCH & COVERS, 0.5'D	78	LF			92	7180
12. SPECIAL COATING FOR SPILL COLLECTION TRENCHES	756	SF			1.50	1135
13. LOADING DOCK FND'S.	L.S.					4000
14. LOADING DOCK SLABS	2640	SF			4.50	11,880
15. ROLLOVER BERMS	185	LF			3.00	555
TOTAL CONCRETE						140,460
	Sheet Total					

WESTON Construction Cost Estimate

Date Prepared: 2-20-84

Sheet 3 of 10

Project: NAVFAC

Work Order No.: 0628-05-16

Subject: EL TORO

Basis For Estimate: CONCEPT

Drawing No.:

Estimator: J. SMITH

Checked By: R. [illegible]

Item Description	Quantity		Material		Labor	
STRUCTURAL STEEL	No. Units	Unit Meas.	Per Unit	Total	Per Unit	Total
1. BUILDING STRUCTURAL FRAMING	73	TONS		INCL.	154.0	11 242.0
2. LOADING AREA ROOF FRAMING	10	TONS			1540	15,400
3. ROOF DECK 1½", 18 GA (BUILDING)	14,570	SF			1.50	21 860
4. ROOF DECK 1½", 20 GA (LOADING AREAS)	2640	SF			1.25	3300
5. MISC. STEEL	L.S.			✓		7500
TOTAL STEEL & DECK						160,480
	Sheet Total					

WESTON Construction Cost Estimate	Date Prepared 2-20-84	Sheet 4 of 10
Project NAVFAC	Work Order No. 0628-05-10	
Subject EL TORO	Basis For Estimate CONCEPT	
Drawing No.	Estimator J. SMITH	Checked By

Item Description	Quantity		Material		Labor	
GENERAL CONSTRUCTION	No. Units	Unit Meas.	Per Unit	Total	Per Unit	Total
1. ROOF INSULATION, 2" RIGID	14570	SF		INCL.	1.30	18940
2. BUILTUP ROOFING FLASHING, ETC.	17210	SF			3.00	51630
3 MASONRY WALLS, 10" AVE THICKNESS	16080	SF			8.00	128640
4. BLOW OUT METAL PANELS	1500	SF			10.00	15000
5. DOORS & FRAMES						
10x10 ROLLUP STEEL						
DOORS. (RATED)	6	EA			2800	16800
(NON-RATED)	6	EA			2400	14400
3x7 INTERIOR (A.L.)	11	EA			400	4400
3x7 EXTERIOR (A.L.)	8	EA			600	4800
6. ACT CEILINGS, OFFICE TOILET & LAB AREAS	1250	SF			1.60	2000
7. VAT, OFFICE AREAS, ETC.	1250	SF			1.00	1250
8. FINISH PAINTING	L.S.					20000
9. FIBERGLASS SHEET WALL, INCL. WOOD FRAME	600	SF			4.00	2400
TOTAL GENERAL CONSTR.						280260
	Sheet Total					

WESTON Construction Cost Estimate	Date Prepared 2-20-84	Sheet 5 of 10
Project NAVFAC	Work Order No. 0628-05-16	
Subject EL TORO	Basis For Estimate CONCEPT	
Drawing No.	Estimator J. SMITH	Checked By R. [illegible]

Item Description	Quantity		Material		Labor	
	No. Units	Unit Meas.	Per Unit	Total	Per Unit	Total
HVAC						
1. HVAC FOR OFFICE TOILET & LAB AREAS	1250	SF		INCL.	1000	12 500
2. VENTILATION ONLY FOR REMAINDER OF BUILDING, USING POWERED ROOF VENTILATORS	13320	SF		INCL.	450	59 940
TOTAL HVAC						72,440
	Sheet Total					

WESTON Construction Cost Estimate

Date Prepared: 2-20-84

Sheet 6 of 10

Project: NAVFAC

Work Order No.: 0628-05-16

Subject: EL TORO

Basis For Estimate: CONCEPT

Drawing No.:

Estimator: J. SMITH

Checked By:

Item Description	Quantity		Material		Labor	
ELECTRICAL	No. Units	Unit Meas.	Per Unit	Total	Per Unit	Total
1. OFFICE, TOILET & LAB AREAS, POWER & LIGHTING	1250	SF		INCL.	6.00	7500
2. OTHER AREAS, POWER & LIGHTING (EXPL. PROOF)	13320	SF			5.50	73260
3. LOADING DOCK LIGHTING	2640	SF			1.50	3960
4. BUILDING GROUNDING	17210	SF			0.50	8600
5. EMERGENCY GENERATOR SYSTEM, COMPLETE (30 KW CAPACITY)	L.S.					20,000
6. PAGING SYSTEM	L.S.					6,000
7. TELEPHONE CONDUIT SYSTEM	L.S.					4,000
TOTAL ELECTRICAL						123,320
	Sheet Total					

WESTON Construction Cost Estimate		Date Prepared 2-20-84	Sheet 7 of 10
Project NAVFAC		Work Order No. 0628-05-16	
Subject EL TORO		Basis For Estimate CONCEPT	
Drawing No.	Estimator J. SMITH	Checked By	

Item Description	Quantity		Material		Labor	
	No. Units	Unit Meas.	Per Unit	Total	Per Unit	Total
PLUMBING						
1. SHOWER / DECON AREA.	10	EA		INCL.	700	7000
– MALE + FEMALE						
TOILET ROOM FIXTURES						
2. EMERGENCY SHOWER &	5	EA			1500	7500
EYEWASH STATIONS						
W/ SUMP						
3. ROOF DRAINAGE +	17210	SF			0.75	12910
U/F STORM SYSTEM						
TOTAL PLUMBING						27,410
	Sheet Total					

WESTON Construction Cost Estimate

Date Prepared: 2-20-84

Sheet 8 of 10

Project: NAVFAC

Work Order No.: 0628-05-16

Subject: EL TORO

Basis For Estimate: CONCEPT

Drawing No.:

Estimator: J. SMITH

Checked By: R. PE[illegible]

Item Description	Quantity		Material		Labor	
FIRE PROTECTION	No. Units	Unit Meas.	Per Unit	Total	Per Unit	Total
1. SPRINKLER ENTIRE BUILDING						
NORMAL HAZARD	1250	SF		INCL.	1.50	1875
HIGH HAZARD	13320	SF			2.50	33300
2. DETECTION & ALARM SYSTEMS	14570	SF			1.50	21855
3. FIRE EXTINGUISHERS	15	EA			80	1200
TOTAL FIRE PROTECTION						57230
	Sheet Total					

WESTON Construction Cost Estimate

Date Prepared: 2-20-84

Sheet 9 of 10

Project: NAVFAC

Work Order No.: 0628-05-16

Subject: EL TORO

Basis For Estimate:

Drawing No.:

Estimator: J. SMITH

Checked By: R. [illegible]

Item Description	Quantity		Material		Labor	
EQUIPMENT	No. Units	Unit Meas.	Per Unit	Total	Per Unit	Total
1. DOCK LEVELLERS	2	EA		INCL.	5000	10 000
2. LAB EQUIPMENT (ALLOW)						10 000
3. FURNISHINGS (ALLOW)						5 000
4. LOCKERS	20	EA			60	200
5 FORK LIFTS, EXPL.-PROOF CONSTRUCTION	2	EA			30K	60 000
6. SAFETY SIGNS	L.S.					150
7. SPILL CONTROL EQUIPMENT	L.S.					500
8. PERSONNEL SAFETY EQUIPMENT						
CLOTHING SETS	5	EA			150	750
ESCAPE PACKS	3	EA			500	1500
SCBA'S	2	"			1000	2000
RESPIRATORS	10	"			100	1000
9. STORAGE SHELVING 2' DP x 6' HIGH, HVY DUTY	435	LF			70	30450
10. DRUM STORAGE RACKS 8' H x 5' W x 5' DP	117	EA			100	11700
TOTAL EQUIPMENT						139 250
	Sheet Total					

WESTON Construction Cost Estimate

Date Prepared: 2-20-24

Sheet 10 of 10

Project: NAVFAC

Work Order No.: 0628-05-16

Subject: EL TORO

Basis For Estimate: CONCEPT

Drawing No.:

Estimator: J. SMITH

Checked By: R. [illegible]

Item Description	Quantity		Material		Labor	
SITEWORK	No. Units	Unit Meas.	Per Unit	Total	Per Unit	Total
1. REMOVE EXISTING BITUMINOUS PAVING	3000	SY		INCL.	1.50	4500
2. REPLACE BITUMINOUS PAVING	1000	SY.			8.00	8000
3. POWER TO BUILDING FROM EXISTING POLE	300	LF			20	6000
4. STORM DRAINAGE PIPING & TIE-IN	L.S.					5000
5. SAN. DRAINAGE PIPING & TIE-IN	L.S.					5000
6. WATER SUPPLY LINE TO BUILDING	L.S.					2000
TOTAL SITEWORK						35,500
	Sheet Total					

APPENDIX E

PRELIMINARY ENVIRONMENTAL ASSESSMENT

APPENDIX E

PRELIMINARY ENVIRONMENTAL ASSESSMENT

Submitting DoD Component: Defense Logistics Agency (DLA)
Defense Property Disposal Service (DPDS)
Federal Center, Battle Creek, Michigan

Project Title: Hazardous Material/Hazardous Waste Storage Facility
El Toro Marine Corps Air Station (MCAS)
El Toro, California
(FY 1987 MILCON Project)

Installation: To be located within the El Toro MCAS DPDO Lot 1, El Toro, California.

Date of Submission: February 1984.

Prepared by Roy F. Weston, Inc. under contract to Naval Facilities Engineering Command (NAVFAC ENGCOM), Environmental Quality Division, Alexandria, Virginia.

E.1 INTRODUCTION

E.1.1 Mission of the DPDS

Hazardous waste regulations promulgated under the Resource Conservation and Recovery Act (RCRA) of 1976, established comprehensive rules for the cradle-to-grave management of hazardous wastes. DoD Environmental Quality Program Policy Memorandums (DEQPPM's) have stated the policy of conservation, recovery, and disposal of hazardous wastes in an environmentally-acceptable manner. These policy memorandums designate the Defense Logistics Agency (DLA) as the DoD activity responsible for disposal of all hazardous materials except those categories which the DoD components were specifically directed to retain, such as toxicological, biological, radiological, and lethal chemical warfare materials. The DoD policy memos also directed DLA to take the lead in a coordinated DLA/DoD component effort to determine requirements to bring storage facilities that support the assigned disposal mission into compliance with RCRA standards.

The DLA subcommand with responsibility for the execution of the disposal mission is the Defense Property Disposal Service (DPDS), with local representation on many DoD installations through a Defense Property Disposal Office (DPDO) or Off-Site Branch (OSB). These elements' major objectives are the following:

- Ensure maximum DoD and Federal utilization of personal property through transfer to other Federal users.
- Permit donation to authorized recipients.
- Obtain optimum monetary return to the government for property sold.
- Recover, when economically feasible, precious metals from surplus items.
- Minimize the need for abandonment or destruction.

The DPDS mission is accomplished through the following steps:

- Receipt of personal property assets that become excess to the needs of the individual military services.
- Screening of these assets for possible reutilization by other DoD activities.
- Screening by GSA for other U.S. and local government agencies.
- Sale of usable property that survives screening by DoD and GSA.
- Downgrading to scrap of items not sold as usable property.
- Sale of scrap for recycling or reprocessing.
- Ultimate disposal (e.g., incineration, burial, or terminal storage) of those items that were not or could not be reutilized or sold.

This assessment will evaluate the environmental consequences of hazardous material storage in the geographical area of the El Toro MCAS. Hazardous items are presently generated at multiple locations, on multiple installations, none of which meet current RCRA requirements and DPDO storage needs. This assessment will describe the present state of the environment and evaluate the effects of the recommended course of action considering the factors involved. Evaluation will be on the basis of comparison between local, short-term uses of the environment and the maintenance and enhancement of long-term beneficial uses.

E.1.2 Need for the Proposed Action

On 19 May 1980, the Environmental Protection Agency (EPA) published instructions that provide comprehensive regulation of hazardous wastes per RCRA. DEQPPM's have since stated a policy that DoD components would reduce hazardous waste generation to the maximum extent possible through alternative material use, reutilization, reclamation, or recycling. The memorandums also state that DoD components will implement EPA hazardous waste management regulations and that individual activities are responsible for properly collecting, packaging, identifying, and labeling the material and waste prior to turning it in to the DPDO for subsequently required actions. El Toro is one of the many areas where new facilities will be built to meet regulatory requirements.

Even with intensified DoD component efforts and actions to reduce hazardous waste generation, substantial quantities have and will remain that meet the RCRA definition of hazardous items. Surveys of area military installations and activities have determined the projected generations of hazardous materials and wastes and identified the projected conforming storage requirements for excess hazardous materials and wastes. The results of these surveys indicated large varieties and volumes of waste generation, with little existing space meeting conforming storage requirements. No adequate central storage facility that could handle the volume and timeframe requirements exists at the present time.

The DPDO is responsible for actions involving interinstallation and interservice reutilization and disposal activities. This should be done in the most practical manner consistent with national environmental policy, statutory requirements, and the Defense mission. Beneficial reuse of materials is dependent on such factors as timeframes, quantities, changing needs, conditions, and funding constraints. Hazardous materials and wastes

storage is required during the time when materials and wastes are accumulated in sufficient quantities for economical transactions/contracts, and the necessary time is available for executing the terms of the agreements. Average timeframes exceed RCRA minimums and therefore it is necessary that this facility meet HM/HW storage requirements. Widely scattered and separated facilities rather than a centralized facility would be extremely inefficient in meeting the staffing, knowledge, inspection, and administrative requirements of RCRA, and so were not considered.

The El Toro DPDO is currently responsible for HM/HW generated at activities located throughout the Los Angeles area. These activities include the following:

- El Toro MCAS.
- Tustin MCAS (Helicopter).
- Long Beach Naval Shipyard (NSY).
- Seal Beach Naval Weapons Station (NWS).
- Various other small activities.

The El Toro DPDO currently consists of the DPDO warehouse (Building 319), storage lot 1, and storage lot 2. The El Toro DPDO currently does not accept HW because the existing facilities are inadequate. HW generated at the various activities is currently stored at the activity HW storage facilities, and removed/disposed of at an offsite facility by private contractors. HM handled by the DPDO is currently stored at the El Toro DPDO lot 1, which is a nonconforming facility. HW generated by the El Toro MCAS activity currently is stored on outside storage pads that are also nonconforming because of the lack of physical separation controls, safety and emergency response equipment, and climate controls.

The proposed project consists of constructing an incombustible enclosed building for storage, packaging, and loading/unloading operations. Proposed project completion is presently projected for late in calendar year 1987.

Equipment items to be supplied for use in the proposed facility include EE rated (nonsparking) electric forklifts, shelving and pallet rack storage aids, fire extinguishers, air pack respirators, telephones and other communication devices, warning signs, and office/record files and accessories. Personal protective items will include respirators, goggles, face shields, aprons, impervious coveralls, boots, and gloves.

Prior to construction of this facility, a hazardous waste storage facility permit must be obtained from the U.S. Environmental Protection Agency (EPA) under RCRA. Public notification in the vicinity of the facility, and a public hearing, if requested, is required prior to issuance of a final permit. The final permit has a maximum 10-year duration. The permit application will require the following information:

- General description of the facility.
- Chemical and physical analyses of the hazardous materials to be handled.
- Waste analysis plan.
- Description of the security procedures and equipment.
- Facility inspection schedule.
- Justification of any request for waiver(s) of preparedness and prevention requirements.
- Contingency plan.
- Spill prevention control and countermeasures.
- Description of procedures, structures, or equipment used at the facility.
- Description of precautions to prevent ignition or reaction of ignitables, reactives, or incompatibles.
- Transportation data.
- Facility location information.
- Operator training to ensure safe operations and maintenance.
- Copy of the closure plan.
- Topographic map.
- Other specific information pertinent to specific types of facilities.

E.1.3 Project Description

This project provides for the construction of a joint use Marine-Defense Logistics Agency (DLA) Hazardous Material/Hazardous Waste Storage Facility at the El Toro MCAS (Figure E.1). This project will incorporate a Marine facility with a DLA-funded hazardous materials/waste storage facility. This joint facility will serve all of the DoD needs in the areas as well as those of the El Toro MCAS.

This project is to provide covered storage and auxiliary facilities required to accomplish the hazardous materials disposal mission in accordance with current legislation and DoD policy requirements.

Environmental Protection Agency (EPA) regulations contained within 40 CFR 260 through 265 require storage facilities capable of providing mandatory features including spill protection, security, and safety devices. DoD Environmental Quality Program Policy Memorandum (DEQPPM) 80-5, 13 May 1980, designates DLA as the responsible agency for disposal of most hazardous materials with responsibility for programming the additional resources required.

This project is a new storage facility to serve the El Toro DPDO and MCAS in a location within the DPDO lot 1 (Figures E.2 through E.5). The building will be a single-story steel-framed masonry structure on concrete footings with a concrete floor slab. It will have a floor area of approximately 17,200 square feet for storage of hazardous materials and waste, office space, equipment storage space, and personnel decontamination facilities.

Included in the building will be automatic fire sprinkler/alarm systems, telephones, climate controls, forced ventilation, blow-out walls in the flammable storage areas, emergency showers and eyewash stations, spill and emergency response equipment, and an explosion-proof electrical system. There will also be a spill containment curb and trenches/grating and loading/unloading docks (common for both facilities). Interior spaces will be provided for the storage of oxidizing agents and caustics, acids, toxics, flammables, polychlorinated biphenyls (PCB's), lithium batteries (for MCAS area only) and miscellaneous items (refer to Figure E.4).

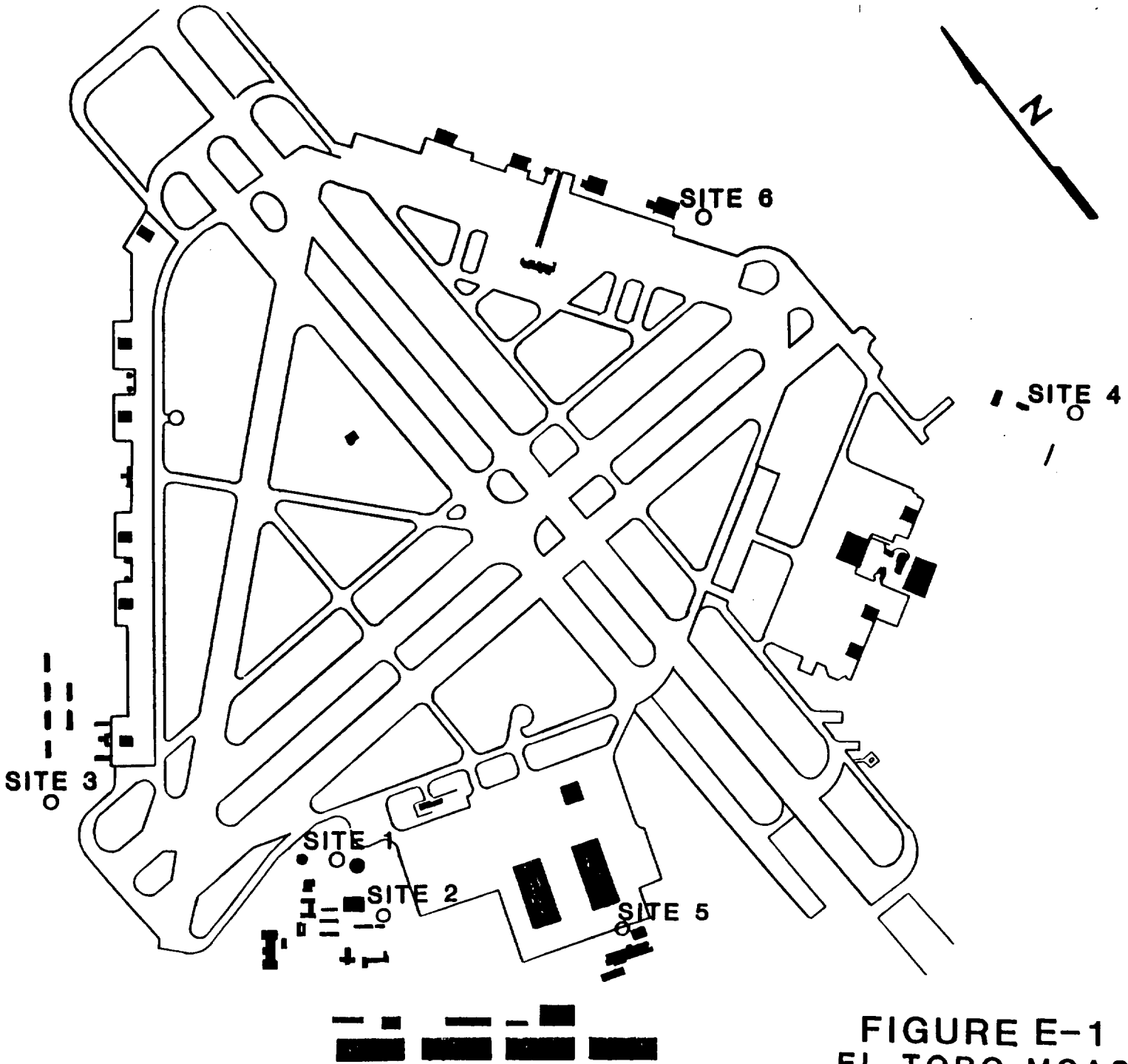
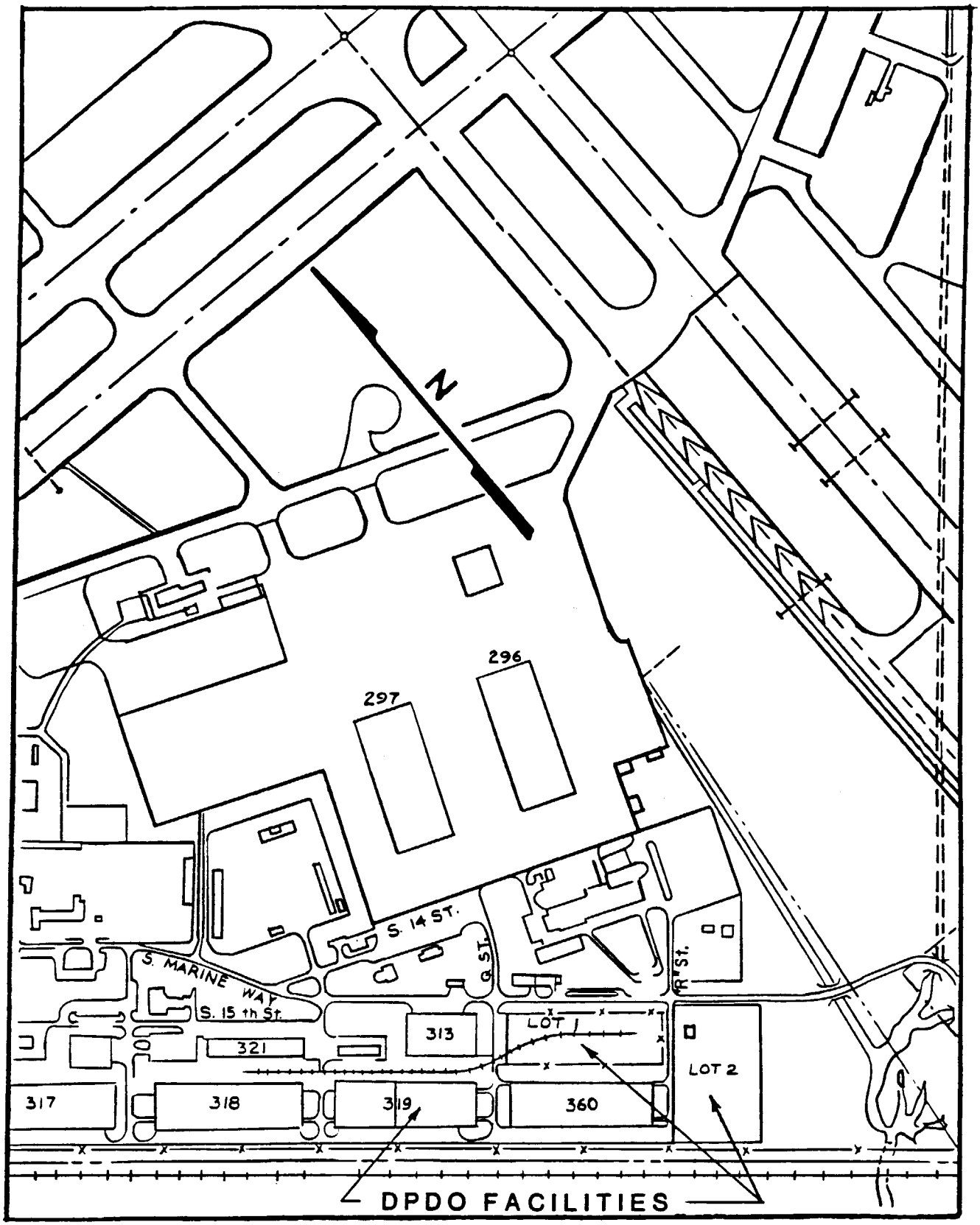
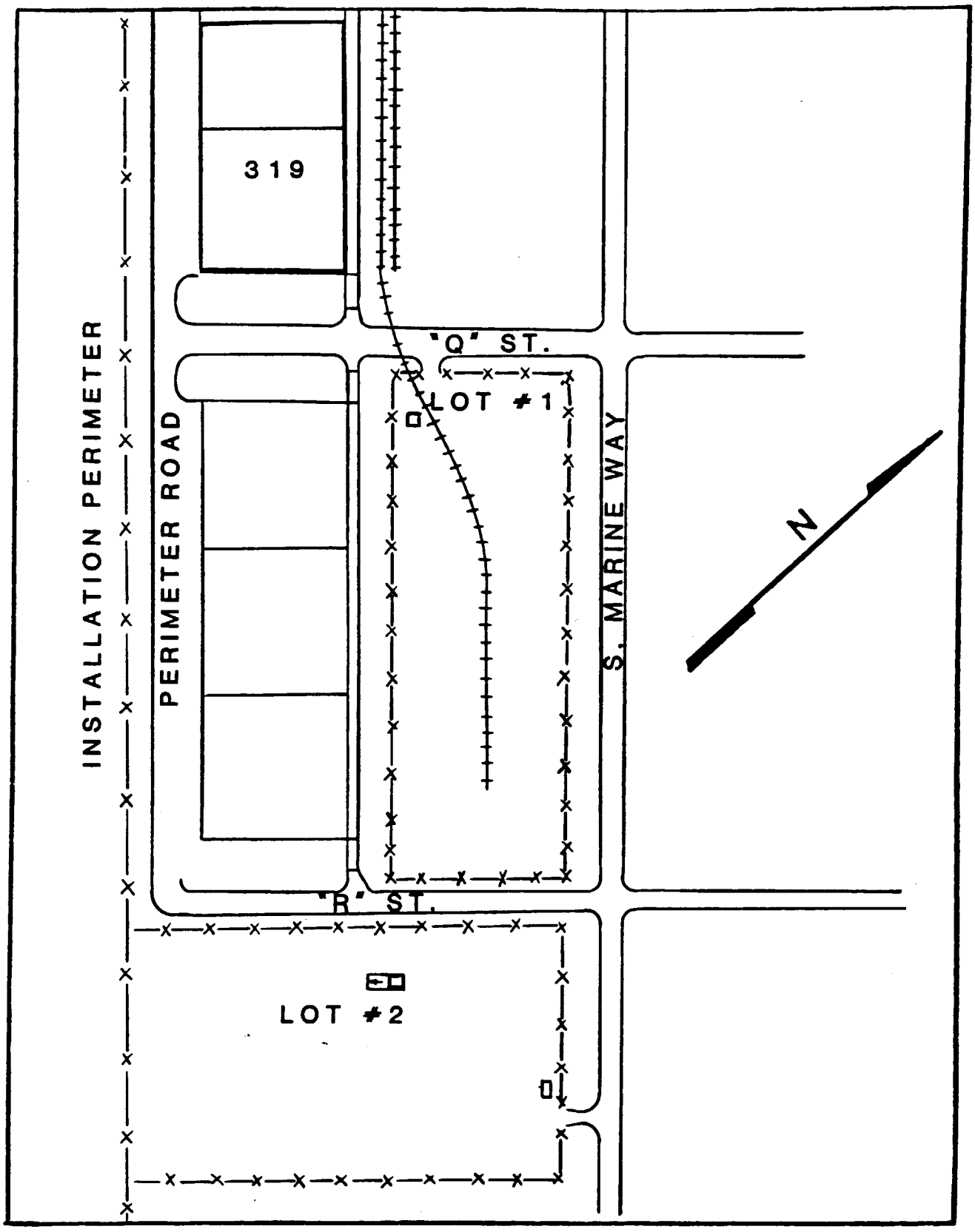


FIGURE E-1
EL TORO MCAS
HW STORAGE AREAS



SCALE: 1" = 600'

FIGURE E-2
DPDO LOCATION SITE PLAN
EL TORO MCAS



SCALE: 1"= 200'

FIGURE E-3
EXISTING DPDO STORAGE FACILITIES
EL TORO MCAS

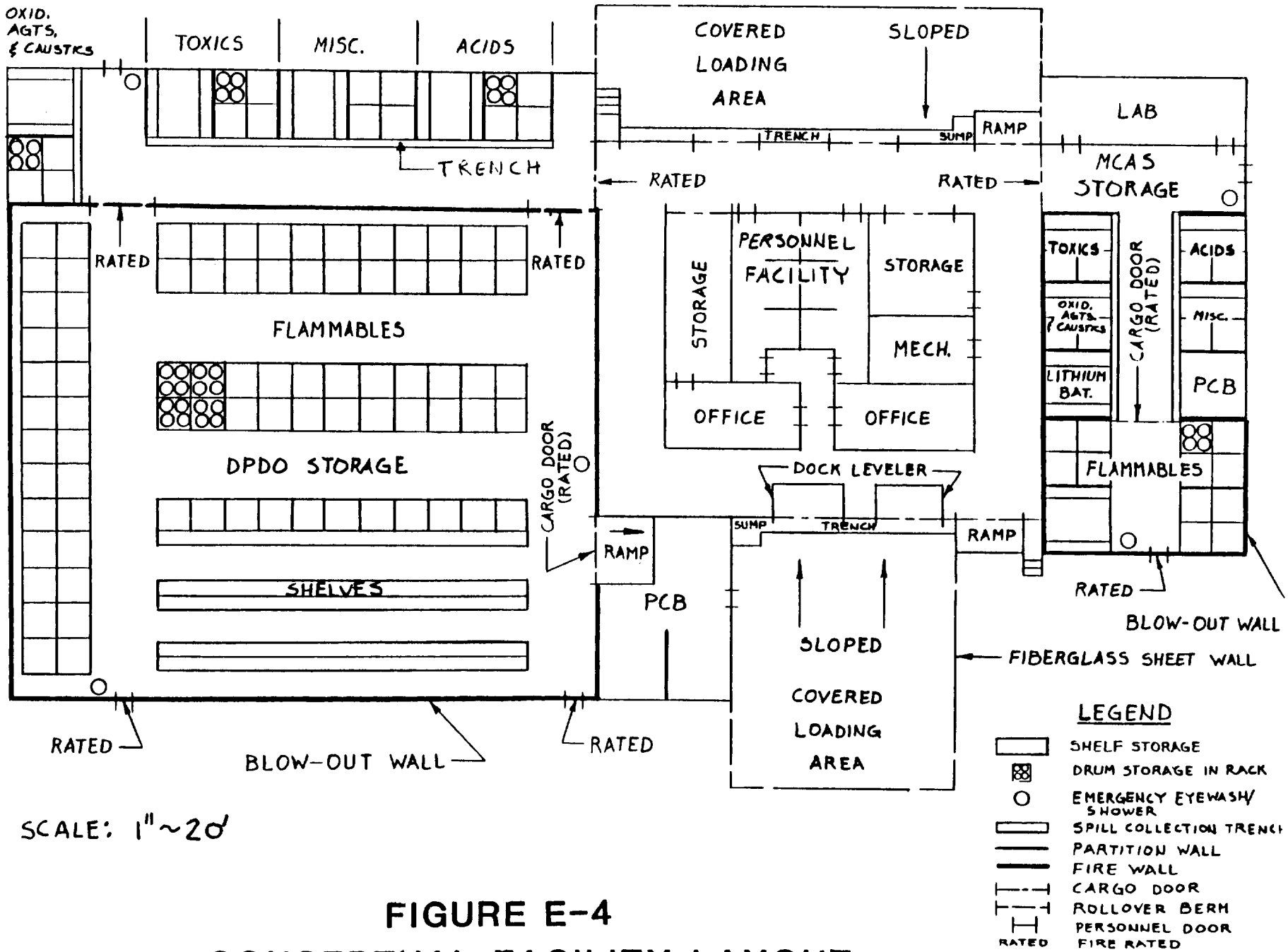


FIGURE E-4
CONCEPTUAL FACILITY LAYOUT

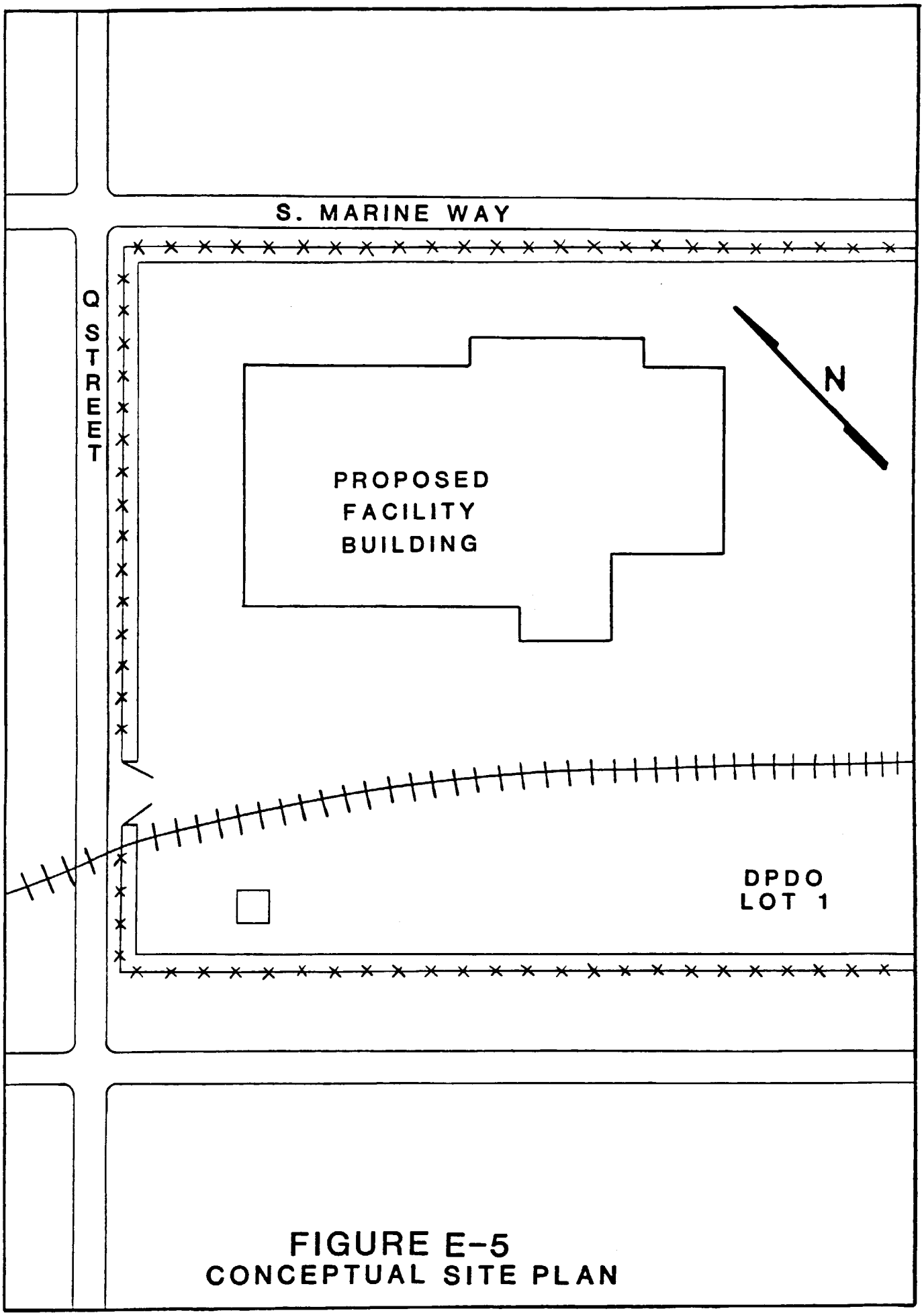


FIGURE E-5
CONCEPTUAL SITE PLAN

The MCAS facility will augment the existing hazardous waste storage pads located throughout the El Toro MCAS Base, which will be used for accumulation areas. This new facility will provide space for processing and repackaging. The storage pads will continue to be used for localized hazardous waste accumulation and temporary storage.

At the present time, there are only temporary (DPDO) hazardous material storage facilities at the DPDO lot 1. These temporary facilities are without physical separation systems and spill containment features. They are to be upgraded to provide more nearly conforming hazardous material/wastes storage for use in the short term until the new facility is completed.

The project will include utility connections, paving, and site improvements. This facility will have a change room/latrine and wash-down area for common usage by both facilities.

E.1.4 Existing Site Characteristics (Figure E.3)

The site for the proposed joint facility at the El Toro DPDO is within the lot 1 open storage area. Lot 1 is a partially paved open storage area currently used for DPDO outside storage for large items and HM storage. The proposed facility will be located near the Q Street main entrance (Figure E.5). This location affords easy vehicular access to both components of the joint facility. The facility will be situated near the DPDO warehouse, Building 319.

E.2 RELATIONSHIP OF PROPOSED ACTION TO LAND USE PLANS, POLICIES, AND CONTROL IN THE AFFECTED AREA

Construction of a permanent HM/HW storage facility on the DPDO lot 1 will not conflict with the Base master plan, which indicates DPDO storage at the location. The location of the new HM/HW storage facility on lot 1 will accommodate one of the siting objectives, which is to have the HM/HW storage facility near the DPDO common support facilities. Its construction near the proposed location of the new transportation facility in DPDO lot 2 and other warehouses should not be a problem because of the safety and emergency response equipment (e.g., fire fighting, spill containment, safety equipment) and operating procedures (e.g., waste compatibility segregation, ventilation, waste testing, etc.) to be used in the new HM/HW storage facility. These procedures and equipment will minimize the potential for any incident and provide rapid response to contain/control any spills or emergencies within the storage facility.

E.3 PROBABLE IMPACT OF THE PROPOSED ACTION ON THE ENVIRONMENT

E.3.1 Temporary Impacts

Temporary impacts on the environment include the following:

- Demolition -- There will be a limited amount of demolition, excavation, and removal of the existing paved surface. This could involve the use of jackhammers and excavating equipment such as a backhoe.

- Construction Dust/Noise -- There is an expected increase in dust/noise during the construction period despite the utilization of control measures.

- Traffic Disruption -- The construction may disrupt the normal flow of traffic in this section of Q Street and South Marine Way at the MCAS for a short period of time.

E.3.2 Permanent Impacts

Permanent impacts on the environment will include the following:

- Vehicular Traffic -- This will increase somewhat because of the combined facility, but the DPDO storage area of the MCAS is designed and planned for truck traffic.

- Utility Services (Water, Sewer, Electricity) -- These will probably show very slight increases over uses in present facilities.

- Noise -- This is not expected to increase due to the enclosed nature of the building, and the facility will be used during normal working hours.

- Aesthetic Enhancement -- The new facility is a totally enclosed building and is expected to be an improvement over the present use of the site.

- Land Utilization -- This development is in keeping with the military policy of full utilization of military-held lands.

- Water Impact -- Spill containment features of the completed facility will protect the surface and groundwaters from potential chemical contamination. A sealed concrete slab will be used for the building floor, and the area around the building is asphalt paved. All loading/unloading and storage bays are provided with spill containment berms or trenches.

- Air Impacts -- Emissions of air pollutants will be negligible, both due to the construction activities and operations of the completed HM/HW storage facilities. HM/HW will be stored in closed containers.

The following mitigating measures will be taken during construction:

- All vehicles and stationary piston-engined powered equipment will have emission control systems in conformance with state, Federal, and local regulations. These systems will be operational and well maintained.

- Construction areas will be watered for dust control, as necessary, in conformance with construction industry and local standards.

- Special impacts of the proposed action:

  - If a fire should take place at the HM/HW storage facility it could smoke while being brought under control. This smoke could carry toxic and hazardous fumes. Any surrounding area could be affected by this fire and would have to be evacuated of nonfire-fighting personnel. A contingency plan will be prepared to address this type of emergency response.

  - It is planned that the new facility will be provided with fire walls and a sprinkler system. These measures should control, suppress, and put out any fire that may start, thus controlling and possibly eliminating the chance of a smoking fire.

  - The HM/HW storage facility will be equipped with automatic fire sprinklers, fire alarms, smoke detectors, and remote (to fire department) alarms.

E.4 ALTERNATIVES

Type of action alternatives and site alternatives were considered. Options under each of these categories are discussed in the subsections that follow.

E.4.1 Project Alternatives (Type of Action)

E.4.1.1 Separate MCAS and DPDO HM/HW Storage Facilities

The MCAS would construct separate (single use) HM/HW storage facilities for the collection, identification, transfer, and temporary (less than 90 days) storage of MCAS-generated HM/HW. The Defense Logistics Agency would construct a separate storage facility for those HM/HW turned in to the El Toro DPDO.

This alternative would require two sites and transportation of MCAS generations between those two sites. Each facility would need its own loading/unloading area, change room, and storage area.

E.4.1.2 Joint Facilities (Selected Project Alternative)

The MCAS and DLA would construct one building with two separate areas at one site. One area would be used by the MCAS for collection, identification, transfer, and temporary storage of MCAS-generated HM/HW. The other larger area would be used by the El Toro DPDO to store HM/HW turned in while going through the reutilization, sale, or disposal cycles.

This alternative would consolidate the MCAS and DLA HM/HW facilities at one site. Consolidation allows the use of less land in an area where space is limited. It allows construction of both facilities at the same time, which would obtain cheaper overall construction costs. Joint facilities enable common use of the personnel facilities, loading and transfer areas, and an interior wall. In addition, fire and emergency response equipment would be required at only one site.

Benefits that will occur from this alternative include increased safety, minimal possibility of spills and contamination, and increased item reutilization, and reuse and recycling of materials. Centralized storage is a key element in realizing the efficiency of receipt, transfer, documentation, storage, inspection, and shipping of hazardous materials and wastes.

Operational safety and environmental requirements strongly discourage the use of widely separated and diverse facilities for hazardous waste storage. Internal and external staffing, management, and security can be done more effectively and efficiently at one central location. El Toro MCAS generators do not have HW storage facilities that conform to RCRA requirements. This precludes the use of existing storage facilities rather than a new single facility.

The proposal for a joint facility at the El Toro MCAS is cost effective, efficient, and in keeping with full land utilization. To continue the present operations might require further investment in upgrading nonconforming facilities. The site proposed is in conformance with the El Toro MCAS Base Master Plan.

The MCAS and DLA requirements for a new HM/HW storage facility are in the same time-frame, and are the same type of facility, and are needed in the same geographic area. Consideration of these factors and the benefits described above has led to selection of this project alternative.

E.4.1.3 No Action

This alternative is not in compliance with existing legislation and DoD policy. The DPDO would be unable to perform its mission responsibilities for the military services. The military service installations and activities do not have suitable conforming storage and none would be available. This alternative would result in the continued possibility of adverse environmental contamination and violation of DoD and RCRA requirements.

E.4.1.4 Postponing Action

Any postponement of the joint facility effort would result in the continued possibility of adverse environmental contamination and violation of DoD and RCRA requirements.

E.4.1.5 Other Existing Facilities

No existing Navy facilities meet the requirements for HM/HW storage, so no existing facilities are available for use by direct occupancy. Space is in short supply at the El Toro MCAS. Since the El Toro DPDO requires the majority of HM/HW storage space, the HM/HW facility should be located on a DPDO site so that the operations would be located near the main DPDO warehouse and managing personnel.

E.4.2 Project Site Alternatives

Eight project sites were considered. They were evaluated in the February 1984 HM/HW Generation, Hazard Analysis and Storage Facility Design recommendations report prepared for NAVFAC ENGCOM by Roy F. Weston, Inc.

E.5 ANY PROBABLE ADVERSE ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED SHOULD THE PROPOSAL BE IMPLEMENTED

There will be a temporary increase in noise and dust during the construction period, and a possible increase in traffic, as discussed under impacts. The completed facility will be improved visually over the existing conditions.

E.6 THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USE OF MAN'S ENVIRONMENT AND THE ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The construction of a modern new HM/HW storage facility will eliminate risks taken by using existing nonconforming HM/HW storage facilities. This project represents a coordinated DoD effort to solve a problem. The project also represents increased utilization of military landholdings in conformance with good planning principles. The modern building will provide a safe and healthy working environment for the personnel that will be handling hazardous materials.

This project will provide HM/HW storage facilities that conform to RCRA, thereby providing protection and spill containment for the chemicals stored. This will provide a positive environmental impact by reducing the present potential for contamination of the environment. Enhancement of long-term productivity will result due to the increased environmental protection provided to the El Toro MCAS.

E.7 ANY IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES THAT WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED

No irreversible or irretrievable commitments of resources will be involved in the proposed action.

E.8 CONSIDERATIONS THAT OFFSET THE ADVERSE ENVIRONMENTAL EFFECTS

The primary considerations in behalf of the new joint facility are the following:

- Proper handling, storage, recovery/reuse, and disposal of hazardous material will minimize adverse effects and damage to the environment.
- A joint facility is more effective than separate facilities and represents long-term savings.
- A safe and healthy working environment is protective of the employees.
- The joint facility increases "full utilization of military lands" in keeping with national directives.
- The closing of present inadequate handling facilities by enforcement agencies for deficiencies would create a crisis in handling, storage, and disposal of DoD-generated wastes at El Toro.
- A site is now available that meets the needs. Failure to utilize it now might lead to its use for other purposes.

E.9 SUMMARY

E.9.1 Conclusions

The following conclusions have been drawn from this study:

- The proposed project will have a beneficial environmental effect by upgrading current nonconforming hazardous material and waste storage activities.
- This proposal will not generate additional quantities of hazardous items, but will provide conforming storage for present and projected future generations.
- Existing RCRA permitting requirements will ensure strict design and construction and proper operating procedures.

- Mitigating measures will be taken to reduce the adverse effects that could occur during construction and facility operations.

E.9.2 Summary

It is concluded that this project will not generate any significant adverse impacts on the environment. This facility will result in a reduced potential risk to the environment from improperly stored hazardous materials and wastes.