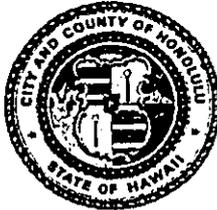


DEPARTMENT OF PARKS AND RECREATION  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET  
HONOLULU, HAWAII 96813

FRANK F. FASI  
MAYOR



WALTER M. OZAWA  
DIRECTOR

ALVIN K.C. AU  
DEPUTY DIRECTOR

REC November 25, 1992

'92 NOV 27 A9:47

Mr. Brian J. J. Choy, Director  
Office of Environmental Quality Control  
State of Hawaii  
Central Pacific Plaza  
220 South King Street, Fourth Floor  
Honolulu, Hawaii 96813

Dear Mr. Choy:

Subject: Negative Declaration and Final Environmental Assessments for the  
Proposed Ala Moana Regional Park Improvements and Safety  
Improvements at Koko Head Regional Park (Koko Head Rifle Range)

We are forwarding for your review and publication in the OEQC Bulletin the negative declarations and four copies of the final environmental assessments for improvements at Ala Moana Regional Park and safety improvements at Koko Head Regional Park (Koko Head Rifle Range).

The Department of Parks and Recreation has assessed the potential impacts of the proposed actions according to Title II, Chapter 200, Environmental Impact Rules, and Chapter 343 of the Hawaii Revised Statutes. Based on the environmental assessments, we have determined that environmental impact statements are not required. Therefore, we are filing negative declarations for both the Ala Moana Regional Park and Koko Head Regional Park projects.

Sincerely,

A handwritten signature in cursive script, appearing to read "Walter M. Ozawa".

For WALTER M. OZAWA, Director

WMO:ei

Attachments

cc: Engineers Surveyors Hawaii, Inc.  
Environmental Communications, Inc.  
Parametrix, Inc.  
Department of Land Utilization

202

1992-12-08-0A-*FEA - Koko Head Rifle Range* DEC - 0, 1992

Final  
Environmental Assessment

For The

KOKO HEAD REGIONAL PARK

KOKO HEAD RIFLE RANGE  
SAFETY IMPROVEMENTS

TMK: 3-9-12: 1

Maunaloa, Honolulu, Oahu, Hawaii

This Environmental Assessment prepared pursuant to Chapter 343, HRS

Prepared For:

Department of Parks and Recreation  
Facilities Development Division

City & County of Honolulu

Prepared By:

Engineers-Surveyors Hawaii, Inc.  
and  
Parametrix, Inc..

Final  
Environmental Assessment

For The

KOKO HEAD REGIONAL PARK

KOKO HEAD RIFLE RANGE  
SAFETY IMPROVEMENTS

TMK: 3-9-12: 1

Maunaloa, Honolulu, Oahu, Hawaii

This Environmental Assessment prepared pursuant to Chapter 343, HRS

Prepared For:

Department of Parks and Recreation  
Facilities Development Division

City & County of Honolulu

Prepared By:

Engineers-Surveyors Hawaii, Inc.  
and  
Parametrix, Inc..

## TABLE OF CONTENTS

<u>SECTION</u>		<u>PAGE NUMBER</u>
I.	SUMMARY	1
II.	PROJECT DESCRIPTION	2
III.	AFFECTED ENVIRONMENT	4
IV.	MAJOR IMPACTS AND ALTERNATIVES CONSIDERED	6
V.	MITIGATION MEASURES	7
VI.	DETERMINATION	8
VII.	FUNDING AND PHASING	9
VIII.	AGENCIES CONSULTED IN PREPARATION OF E.A.	10
IX.	LIST OF PREPARERS	11

### LIST OF FIGURES

- Figure 1. Project Location Map (USGS Quad Map)  
Figure 2. Project Site Plan -Existing Conditions

Exhibit A - Preliminary Project Improvements

I. SUMMARY

CHAPTER 343, HAWAII REVISED STATUTES (HRS)  
ENVIRONMENTAL ASSESSMENT

Type of Action: Agency

Project Name: Koko Head Regional Park  
Koko Head Rifle Range Safety Improvements

Project Description: The applicant proposes to design and construct certain improvements at the Koko Head Rifle Range (See Figure 1) that will improve safety operations of the Range. Also, restroom facilities, a range master's residence, and other accessory physical site improvements will be provided to improve sanitation and security. The major changes involving the operations of the Range (See Figure 2) consist of shifting the location of certain target or range venues. These location shiftings have been made with safety as the determining factor for the relocation.

Project Location: 8120 Kalaniana'ole Highway

Tax Map Key: 3-9-12: por. of 1

Fee Owner: City & County of Honolulu

State Land Use Designation: Conservation Subzone "G"

Development Plan Land Use Map: Preservation

County Zoning: P-1

Applicant: Department of Parks & Recreation

Accepting Authority: Department of Land Utilization, City & County of Honolulu

Contact Person: F. J. Rodriguez (Tel. 524-0594)



## II. PROJECT DESCRIPTION

### A. Technical Characteristics

The proposed improvements to the Koko Head Rifle Range ("Range") involves: the relocation or shifting of the Skeet Range to the right of it's present location to accommodate the relocated Combat /MPPL Range; the design and construction of the American Trap Range and the 2700 Pistol Range in currently vacant lands; and all other target venues remain in their existing locations.

(See Figure 2) . In addition to the target range improvements, accessory range improvements including the Range Master Residence will be designed and built at the entry to the Range, new rest room facilities, and additional parking spaces will be provided. All described improvements will take place within the existing Range, with no improvements planned outside of the property.

In summary, the proposed improvements will consist of:

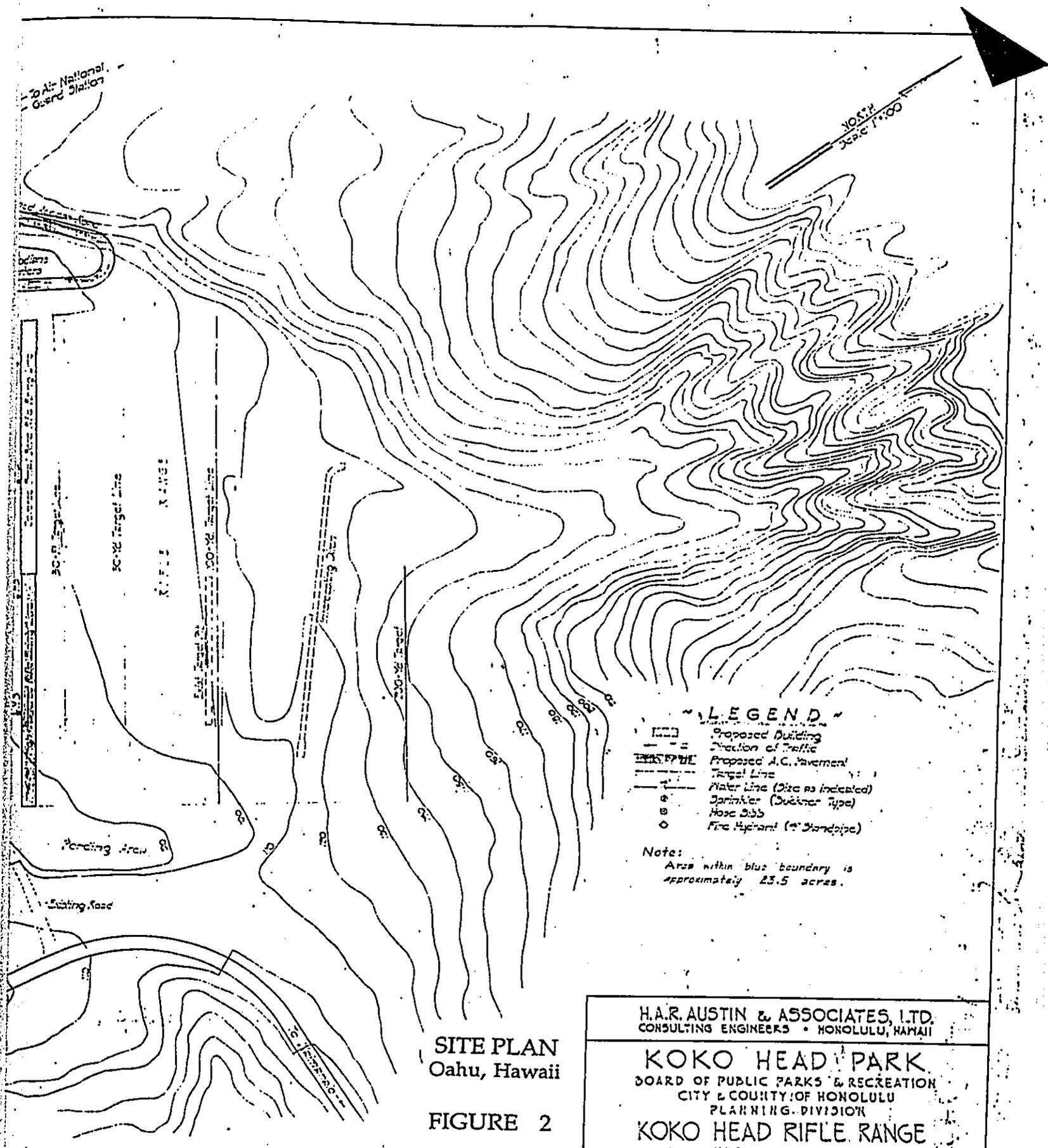
1. Site clearance and grading for the relocation and/or construction of the three target venues, i.e. Skeet Range, Combat/MPPL Range, and American Trap Range;
2. Design and construction of a new Range Master Residence;
3. Design and construction of New Restroom facilities;
4. Grading and paving for new additional parking spaces, and Landscaping..

Total Estimated construction costs: \$750,000.00

### B. Social and Economic Characteristics

Historically, the Range has been in it's present use pattern since September, 1937 (Department of Parks & Recreation chronology). As the only outdoor weapons firing range, the goals and objectives to provide a training and outdoor recreational venue for Honolulu Police Department (HPD) personnel and the general public alike is continually growing. Active and reserve sworn officers of the Honolulu Police Department train daily at the Range to ensure competency in meeting their obligations of serving and protecting our community. At the present time, approximately 3000 civilian recreational shooters use the Range facility each month. In addition to the general public, the HPD trains at the range and approximately 200 use the range facilities monthly.





- LEGEND**
- ▭ Proposed Building
  - - - - - Direction of Traffic
  - - - - - Proposed A.C. Pavement
  - ⋯ Target Line
  - Water Line (Ditch as indicated)
  - S Sprinkler (Quaker type)
  - B Hose Bib
  - O Fire Hydrant (" Sandpipe)

Note:  
Area within blue boundary is approximately 23.5 acres.

**SITE PLAN**  
Oahu, Hawaii  
**FIGURE 2**

H.A.R. AUSTIN & ASSOCIATES, LTD.  
CONSULTING ENGINEERS • HONOLULU, HAWAII

**KOKO HEAD PARK**  
BOARD OF PUBLIC PARKS & RECREATION  
CITY & COUNTY OF HONOLULU  
PLANNING DIVISION

**KOKO HEAD RIFLE RANGE**  
**MASTER PLAN**

SHEET 1 OF 1 SHEETS      SCALE: 1"=100'      JUNE 30 1959

RECOMMENDED D. A. Sealey DIRECTOR OF PLANNING	REVIEWED JUN 29 1959 SUN. OF RECREATION	DESIGN P. S. L.
APPROVED H. H. Austin SUPERVISOR	REVIEWED JUN 29 1959 SUN. OF RECREATION	CHECKED JUN 29 1959
REVISION	DATE	BY

CONTOUR INTERVAL = 10 FT.

H.A.R. Austin & Associates, Ltd.  
*Robert H. Austin*  
REG. ENG. NO. 1000

The primary purpose for the proposed improvements also lie with the safety factors and considerations. In recent years, stray rounds have been found as far away as the Hanauma Bay parking lot, on the crater rim walls, and in close proximity to the Job Corps Center entry road. It is with these incidents of stray rounds being found well outside the Range boundaries that the analysis and planning for these improvements have been conducted. In total, six different scenarios were developed and studied before the selection of scenario # 6 was made. Scenario # 6 is felt to be the best practicable solution to reducing or eliminating the potential for stray rounds beyond the crater's rim walls.

C. Environmental Characteristics

The project site is presently in active use as a target shooting range, and is located within the Kahauloa Crater, a small crater next to Koko Crater, and adjacent to both Hanauma Bay Crater and Koko Head Crater. These four craters are part of the Koko Head rift zone, and are the remnants of the Koolau Shield volcano and more recent rift volcanoism which took place some 250,000 years ago during the Honolulu Series of eruptions. Median temperatures range from the low 70s to the middle and upper 80s Fahrenheit.

### III. AFFECTED ENVIRONMENT

#### A. Project Location

Koko Head Regional Park is over 700 acres and the Koko Head Rifle Range is within the Kahauloa Crater at 8120 Kalaniana'ole Highway.

#### B. Geographical Characteristics

##### 1. Topography

Terrain features within the Crater are level for the most part with elevations ranging from above mean sea level of + 84 feet to +120 feet at the eastern rim, which is parallel to Kalaniana'ole Highway.

##### 2. Soils

Kahauloa Crater soils are classified as Koko Silty Loam and are considered poor for agricultural uses. The State Department of Agriculture ALISH maps do not rate these lands as being of importance agriculturally. The climate at the Range is both dry and hot with annual median temperatures in the high to upper 70 degrees Fahrenheit." Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, U.S. Department of Agriculture, Soil Conservation Service, August, 1972.

#### C. Hydrological Characteristics

There are no perennial streams or surface water features in the Kahauloa Crater. Drainage occurs naturally, and due to the excellent permeability of the Koko Silty Loam, the infrequent ponding when heavy rains accumulate, dissipates within three to five days.

##### 2. Flood Insurance Study Designation

The site is located in Zone D, "*Areas of undetermined but possible flood hazard.*" FIRM Flood Insurance Rate Map, panel 120 of 135, September 4, 1987.

D. Biological Characteristics

1. Flora

The project site is not considered a prime habitat for indigenous flora or fauna species.. It is within the confines of a larger Koko Head Regional Park and the dry, semi-arid terrain consists of kiawe, haole koa, pili grass, and Japanese tea as predominant vegetation types.

2. Fauna

The relative undisturbed nature of the project site area preclude the presence of suitable habitat for endemic forest birds or mammals. Onsite fauna that may be found would consist of exotic or introduced varieties of avifauna i.e. Indian Mynah, Common Gray Dove, Brown Sparrow, Red vented bulbul, Brazilian Cardinal, and other varieties of escaped cage birds . Exotic faunal species would be the Indian mongoose, feral dogs/cats, and rodent species.

E. Historic and Archaeological Characteristics

The long term status of the project site does not preclude the possible presence of archaeological sites. However, the actual existence of sites would be confirmed when site work is under way for the clearing and grading. The standard condition that if during construction, any historical finds were discovered, all work would be stopped to allow the State Historic Sites Division the opportunity to evaluate any finds made during construction.

#### IV. MAJOR IMPACTS AND ALTERNATIVES CONSIDERED

##### A. Impacts

Impacts due to the implementation of the proposed project improvements can be viewed in two areas: short and long term. Short term impacts, beneficial and adverse, generally result from construction related activities. These are consequently of short duration and are limited to the actual construction phase of site improvements, i.e. on site and structural. Long term impacts, beneficial and adverse, result from the implementation and operation of the proposed project. Topographic alterations will result from onsite grading to relocate or construct the new Range venues; the new Range Manager's Residence; and the new comfort stations and parking spaces. connection to existing drainage, utility systems, and infrastructural improvements. There will be increased surface runoff from the proposed improvements and this is due to the increased percentage of hard surfaces that will result of the construction. Impacts to onsite flora and fauna will also result, but are not considered to be of significant impact since both are exotic in nature (introduced species) and are pests. In total, the proposed project scope is not of major magnitude. Finally, the adjacent land uses have established a contiguous land use pattern that would not be adversely impacted by the proposed Range improvements..

##### B. Alternatives

###### 1. Proposed Use (Scenario # 6)

This alternative will enable the Range to fulfill its principal role of providing an outdoor rifle and pistol training facility for both the civilian and law enforcement agencies at the City and State levels, and improve operational safety. The proposed uses are compatible with the adjacent P-1 zoning and would not be inconsistent with current City Development Plan Land Use and County Zoning maps.

###### 2. No Action

The "No Action" alternative would result in the site continuing in its' current active role as an outdoor training facility, but the safety orientation of shifting certain target venues, would not be fully realized.

V. MITIGATION MEASURES

No significant impacts attributable to this project are anticipated. Typical construction impacts will result but these will be mitigated to the extent required by applicable building code ordinances, as well as by good housekeeping procedures. In the event that archaeological sites are uncovered during the construction phase, all work will be stopped and the Historic Sites Division of the State Department of Land and Natural Resources will be contacted to study and determine the find's quality.

VI. DETERMINATION, FINDINGS, AND REASONS SUPPORTING DETERMINATION

After completing an assessment of the potential environmental effects of the proposed project, and consulting with other government agencies, it has been determined that an Environmental Impact Statement (EIS) is not required. Therefore, this document constitutes a Notice of Negative Declaration.

Reasons supporting the Negative Declaration determination are as follows, using as the criteria, the policy, guideline and provisions of Chapters 342, 343, and 344, Hawaii Revised Statutes (HRS).

1. The proposed project will not adversely affect the physical and social environment. There will be minor discomfort and annoyances to the present users of the Range during the construction phase, but these will be mitigated by adherence to the City ordinances which govern contractor operations.
2. There will be no permanent degradation of the existing ambient air quality and community noise levels. During the construction phase, the air and noise standards will be temporarily affected, but these effects will be temporary and short term in nature.
3. No residences or businesses will be disrupted by the project. The site is presently in active use as an outdoor target range.
4. There are no endangered plant species on the project site, and the prevailing flora and fauna are exotic or introduced species.
5. There are no known natural, historic, or archaeological sites within the project's metes and bounds.
6. The project will be compatible with the adjacent P-1 zoning, Development Plan Land Use map, and State Conservation District, General subzone designation.
7. There are no significant adverse secondary effects on population, future development, and public facilities due to this project.

This Notice of Negative Declaration shall serve to meet the requirements of Chapter 343, HRS.

VII. FUNDING AND PHASING

This project will be funded entirely by the applicant, The Department of Parks and Recreation, City & County of Honolulu and all improvements will be designed and built to County standards. Construction will commence after all required permit applications are completed. . Construction costs are estimated to be \$750,000.00 dollars in two increments.

VIII. LIST OF AGENCIES CONSULTED DURING THE PREPARATION OF  
THE ENVIRONMENTAL ASSESSMENT.

ORGANIZATIONS AND AGENCIES:

Agency	Date of Consultation	Date Comment Received
<u>State of Hawaii</u>		
Mr. Harold Masumoto, Director Office of State Planning	8-17-92	
Mr. William W. Paty, Chair State Dept. of Land & Natural Resources	8-17-92	
Dr. Bruce Anderson, Dep. Director State Dept. of Health	8-17-92	8-28-92
Mr. T. Harano, Chief State Dept. of Transportation	8-17-92	9-1-92
<u>City &amp; County of Honolulu</u>		
Mr. Benjamin B. Lee Dept. of General Planning	8-17-92	9-4-92
Mr. Donald A. Clegg, Director Dept. of Land Utilization	8-17-92	9-17-92
Mr. C. Michael Street, Ch. Engr. Dept. of Public Works		
Mr. Joseph N. Magaldi, Director Dept. of Trans. Services	8-17-92	9-11-92
Mr. E. James Turse, Director Dept. of Housing & Community Development		
Mr. Michael S. Nakamura, Chief Honolulu Police Department	8-17-92	8-24-92
Mr. Lionel E. Camara, Chief Honolulu Fire Department	8-17-92	8-26-92
Mr. Kazu Hayashida, Manager Board of Water Supply	8-17-92	
Mr. John Henry Felix City Council	8-17-92	
Hawaii-Kai Neighborhood Board # 1	8-17-92	

**Parametrix, Inc.**

Consultants in Engineering and Environmental Sciences

1164 Bishop Street, Suite 1600 Honolulu, Hawaii 96813  
808-524-0594 • Fax: 808-523-2995



November 23, 1992

Mr. John Harrison, Ph.D.  
Environmental Center  
University of Hawaii at Manoa  
Crawford 317 2550 Campus Road  
Honolulu, HI 96822

Dear Dr. Harrison,

We have received your office comments dated November 17, 1992 and in consultation with the retained consultants, Engineers Surveyors Hawaii, Inc. and Parametrix, Inc. we respond in the following:

1. General Comments

The Center contends that *the Final Environmental Assessment does not fulfill the intent of Chapter 343-6 HRS nor does it meet the content requirements of an Environmental Assessment as specified in Section 11-200-10, HAR.* The consultants described the stated goals and objectives of the proposed project by describing the safety related improvements to an existing facility, and not a new project to be built on vacant or fallow land. The assumptions that the Koko Head Range has been in operation for many years and did not warrant further descriptive narrative to the uninformed non-shooting public is perhaps faulty. To date, however, your comments are the only ones received in this perspective.

2. Project Description and Existing Environment

Section II, PROJECT DESCRIPTION, section A, Technical Characteristics, succinctly describes what amounts to extremely minimal physical alterations to an existing facility. The planned improvements will be phased on a construction schedule that will be designed so as not to interfere with training of the government law enforcement agencies using the Range. Range Master Residence use is limited to the Range Master and the location at the entry point of the Range is to provide the Master to screen all incoming shooters to determine that only those authorized to use the Range are on the property. Utilities that are in use at the present time will continue to be used and this includes Water, Solid Waste, and Sewage. Correspondence with the Board of Water Supply is appended to the Final E.A. and advises that there is existing water availability subject to final review and approval at the time of building plan submittal. Quantities of liquid and solid wastes to be generated by this project's safety improvements do not constitute an increase in current usage practices.



Printed on Recycled Paper

3. Potential Impacts

The proposed safety improvements are not vague in the sense that what is being proposed is new or unusual. Thirteen drawings are provided at the rear of the document to graphically describe the improvements and the basis of safety as the motivating guidelines for implementation. Without the singular use of the Rifle Range, grading, paving and construction of one single family residence is not a spectacular sequence of events. The users of the Range are specific and seek this venue for the use of the Range facility. Koko Head is not a Park, or Zoo that is open to the General Public. Entry and use is limited to qualified shooters who are using the Range as their occupation in law enforcement, or are qualified amateur shooters who are for the most part, active members of shooting clubs. Traffic increase is not a consideration in relation to the proposed safety improvements; venues are being shifted, not being added. No visual impacts will accrue as the result of the proposed improvements since the shifting of target facilities will not eliminate or increase type of range alignments. There will be the paved parking area which will eliminate the random parking habits currently in practice, and the rest room facilities will also improve sanitation practices. Finally, the proposed improvements will not affect the Koko Head Master Plan since all activities are unchanged, only shifted around.

Thank you for your continuing interest and cooperation and we trust that we have resolved your concerns.

Very truly yours,



F. J. Rodriguez

cc: Engineers Surveyors Hawaii, Inc.

11/20/92 08:38

808 522 1818

ENGR SURV HI

FRED RODRIGUEZ

002/003



RECEIVED  
NOV 19 1992

## University of Hawaii at Manoa

ENGINEERS SURVEYORS HAWAII, INC.

Environmental Center  
A Unit of Water Resources Research Center  
Crawford 317 • 2550 Campus Road • Honolulu, Hawaii 96822  
Telephone: (808) 956-7361

November 17, 1992  
EA:00008

Mr. Walter Ozawa  
City and County of Honolulu  
Department of Parks and Recreation  
650 South King Street  
Honolulu, Hawaii 96813

Dear Mr. Ozawa:

Draft Environmental Assessment (EA)  
Koko Head Regional Park  
Rifle Range Safety Improvements  
Honolulu, Oahu

The proposed action would improve the Koko Head Rifle Range by relocating two target venues, the Skeet Range and the Combat/MPPL Range, and by constructing two new target venues, the 2700 Pistol Range and the American Trap Range. In addition to the target range improvements, the action proposes to construct a Range Master Residence with rest room facilities and increased parking facilities. The actions include site clearing, grading, and paving of range lands. The project is anticipated to have no significant impact and thus a negative declaration has been anticipated for the project. The Environmental Center has conducted an in-house review of the proposed project with the assistance of Andrew Tomlinson, Environmental Center.

### General Comments

In general, we find the EA deficient in that it does not fulfill the intent of Chapter 343-6, Hawaii Revised Statutes, nor does it meet the content requirements of an Environmental Assessment as specified in Section 11-200-10, Hawaii Administrative Rules (HAR). We find the document is vague in terms of the specific project plans and their relationship to the existing environment, potential project impacts, and mitigating measures. As a consequence, the potential significance of the proposed project as defined under Section 11-200-12, HAR, cannot be determined from the information provided. As a disclosure document, the purpose of the Environmental Assessment is to provide sufficient information related to the proposed action in order that informed decision-making can be achieved.

Mr. Ozawa

-2-

November 17, 1992

Project Description and Existing Environment

Initially and most importantly, the document fails to describe adequately the proposed project plans and existing conditions at the range facilities. The construction of the Range Master Residence and plans for the construction of rest rooms and parking facilities are given only cursory mention. In addition, there is no description of existing facilities and how construction of new facilities will impact the area. How many people will be residing in the Range Master Residence, and will this be on a permanent basis? What is the potential impact of permanent residents on the existing environment and facilities? In addition, there is little mention of how water is or will be provided to the facilities beyond stating that existing utilities will be utilized. There is also no discussion of waste water or solid waste disposal for the proposed project. How will waste water and solid wastes be disposed of and how will this effect existing disposal facilities in the area?

Potential Impacts

Due to the vague nature of the project description and the existing environment it is difficult to assess the potential impacts of the action. However, it is reasonable to expect that the project will have an impact on range use, traffic, and parking. What is the projected increase in use of the facility? How will traffic be affected during construction of the target venues, the Range Master Residence, and the parking facilities? What is the projected traffic increase in the area after construction is complete?

While the title and project description state that the intent of the project is to improve safety, there is no mention of how the action will improve safety conditions in the area. How will stray bullet fire be reduced with the construction of a Range Master Residence? In addition, what will be the visual impacts of the project on the existing environment and facilities. Finally, how does the project relate to the Koko Head Master Plan? Is it part of the plan?

Summary

Given the incomplete description of the project plans and the existing conditions it is impossible to make a determination on the potential impacts of the action. While the scope of the project appears to not warrant preparation of an Environmental Impact Statement, we suggest that a negative determination as prescribed by section 11-200-12, HAR, is not justifiable on the basis of the information provided in the Environmental Assessment.

Thank you for the opportunity to review this Draft EA.

Sincerely,



John Harrison, PhD  
Environmental Coordinator

cc: OEQC  
Roger Fujioka  
Engineers Surveyors Hawaii, Inc. ✓  
Andrew Tomlinson



HAWAII KAI NEIGHBORHOOD BOARD NO. 1

P.O. BOX 25804 • HONOLULU, HAWAII 96825

RECEIVED  
NOV 05 1992

PARAMETRIX, INC.  
HONOLULU

October 29, 1992

Mr. F.J. Rodriguez  
Parametrix, Inc.  
1164 Bishop Street Suite 1600  
Honolulu, Hawaii 96813

Subject: Koko Head Rifle Range Safety Improvements  
Environmental Assessment Preliminary Review

Reference: Memorandum from Parametrix to Hawaii Kai  
Neighborhood Board No. 1, dated August 17, 1992.

Dear Mr. Rodriguez:

Although your memorandum was received by the Hawaii Kai Neighborhood Board too late to reply within the 20 days stipulated therein, this is to advise that we have no concerns with the Environmental Assessment as written. We do however, take exception to Section VIII of that document which lists our Board as one of the agencies consulted in its preparation. We have no record nor recollection of any such consultation having taken place.

Very truly yours,

  
Lois Evara  
Chair

cc: Councilmember John Henry Felix  
Dr. Maxwell Cooper



Oahu's Neighborhood Board System - Established 1973



HAWAII KAI NEIGHBORHOOD BOARD NO. 1

P.O. BOX 25804 • HONOLULU, HAWAII 96825

RECEIVED  
OCT 08 1992

PARAMETRIX, INC.

October 7, 1992

Mr. F.J. Rodriguez  
Parametrix, Inc.  
1164 Bishop Street Suite 1600  
Honolulu, Hawaii 96813

Subject: Koko Head Rifle Range Safety Improvements  
Environmental Assessment Preliminary Review

Dear Mr. Rodriguez:

Thank you for your letter of August 17, 1992 with enclosure of your 16-page "Draft Environmental Assessment" report for the City and County of Honolulu's proposed project, "Koko Head Rifle Range Safety Improvements" in the Koko Head Regional Park.

Your letter and report were not received by the Hawaii Kai Neighborhood Board in time for placement on the agenda for the Board's regular monthly meeting of Tuesday, August 25, 1992, and the Board has thus been unable to respond to your office within the period of "twenty (20) days from receipt" of your correspondence.

This matter was placed on the agenda for the Board's meeting of Tuesday, September 29, 1992, and is being referred to one of the Board's committees for review and for consideration by the Board at its regular meeting in October.



Oahu's Neighborhood Board System - Established 1973

HAWAII KAI NEIGHBORHOOD BOARD NO. 1  
PAGE 2

As you are probably aware, the continued location, use and condition of the existing rifle range has been a concern of the Board and you can expect to receive a written response.

The Board may be contacting you or others concerned to make a brief visual presentation at one of its future meetings to enable Board members and others in the community to obtain a better understanding of this proposed \$750,000 project.

Thank you again for communicating with the Board.

Yours sincerely,

*Lois Evora* pc  
Lois Evora  
Chair

cc: Mayor Frank Fasi  
Councilmember John Henry Felix  
Senator Donna Ikeda  
Representative David Stegmaier  
Representative Gene Ward  
Hawaii Kai Neighborhood Board members

JOHN WAIHEE  
GOVERNOR OF HAWAII

**R E C E I V E D**  
OCT 21 1992



STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION  
33 SOUTH KING STREET, 6TH FLOOR  
HONOLULU, HAWAII 96813

PARAMETRIX, INC.  
HONOLULU

October 13, 1992

Mr. F.J. Rodriguez  
Parametrix, Inc.  
1164 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813

Dear Mr. Rodriguez:

**SUBJECT: Environmental Assessment Preliminary Review,  
Koko Head Rifle Range Safety Improvements  
Maunalua, Honolulu, O'ahu  
TMK: 3-9-12: 1**

Thank you for the opportunity to review this project. A review of our records shows that there are no known historic sites at the project location, which has been used as a firing range since 1937. This location, in the interior of Koko Head, offered few attractions for traditional Hawaiian settlement, therefore we believe it is unlikely that subsurface habitation or agricultural deposits are present. Our records do show that the outer slopes of Koko Head were used for human burial. It is possible that historic sites, including human burials, will be uncovered during routine construction activities. Should this be the case all work in the vicinity must stop and the State Historic Preservation Division must be contacted at 587-0047.

If you have any questions please call Tom Dye at 587-0014.

Sincerely,

DON HIBBARD, Administrator  
State Historic Preservation Division

TD:amk

WILLIAM W. PATY, CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCE

DEPUTIES

JOHN P. KEPPELER, II  
DONA L. HANAIKE

AQUACULTURE DEVELOPMENT  
PROGRAM

AQUATIC RESOURCES  
CONSERVATION AND

ENVIRONMENTAL AFFAIRS  
CONSERVATION AND  
RESOURCES ENFORCEMENT  
CONVEYANCES

FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
DIVISION

LAND MANAGEMENT  
STATE PARKS  
WATER AND LAND DEVELOPMENT

LOG NO: 6130

DOC NO: 9210TD22

JOHN WAIHEE  
GOVERNOR OF HAWAII



RECEIVED  
SEP 02 1992

JOHN C. LEWIN, M.D.  
DIRECTOR OF HEALTH

STATE OF HAWAII  
DEPARTMENT OF HEALTH

PARAMETRIX, INC.  
HONOLULU, HI

P. O. BOX 3378  
HONOLULU, HAWAII 96801

In reply, please refer to:

August 28, 1992

92-310/epo

Mr. Fred Rodriguez  
Parametrix, Inc.  
1164 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813

Dear Mr. Rodriguez:

Subject: Koko Head Rifle Range Safety Improvements  
Environmental Assessment Preliminary Review

Thank you for allowing us to review and comment on the subject document. We have no comments to offer at this time. Due to the preliminary nature of this project, however, we reserve the right to comment at a later time.

Very truly yours,

A handwritten signature in cursive script, appearing to read "John C. Lewin".

JOHN C. LEWIN, M.D.  
Director of Health

NO RESPONSE REQUIRED.

JOHN WAIHEE  
GOVERNOR



REX D. JOHNSON  
DIRECTOR  
DEPUTY DIRECTORS  
JOYCE T. OMINE  
AL PANG  
JEANNE K. SCHULTZ  
CALVIN M. TSUDA

RECEIVED  
SEP 12 1992

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION

869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-5097

September 1, 1992

IN REPLY REFER TO:

HWY-PS  
2.3492

PARAMETRIX, INC.  
HONOLULU

Mr. F. J. Rodriguez  
Parametrix, Inc.  
1164 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813

Dear Mr. Rodriguez:

Environmental Assessment, Koko Head Rifle Range  
Safety Improvements, Maunaloa, Oahu, TMK: 3-9-12: 01

Thank you for your memorandum of August 17, 1992, requesting our review of the subject proposed project.

The proposed project will not impact our State highway facilities.

Very truly yours,

*Stefan H. Monahan*  
for T. HARANO  
Chief

Highways Division

**Parametrix, Inc.**

*Consultants in Engineering and Environmental Sciences*

1164 Bishop Street, Suite 1600 Honolulu, Hawaii 96813  
808-524-0594 • Fax: 808-523-2995



September 28, 1992

Mr. T. Harano, Chief  
Department of Transportation  
Highways Division  
869 Punchbowl Street  
Honolulu, HI 96813-5097

Dear Mr. Harano,

Subject: Koko Head Rifle Range Safety Improvements Preliminary  
Environmental Assessment Request for Comments

Thank you for your timely response to our request for comments on the subject project. Your department's comments are duly noted and have been forwarded to the Department of Parks & Recreation for their information.

Again, thank you for your continuing interest and cooperation.

Very truly yours,

F. J. Rodriguez

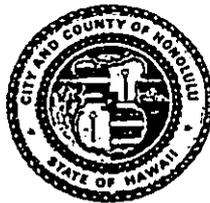
cc: Engineers Surveyors Hawaii, Inc.



Printed on Recycled Paper

DEPARTMENT OF TRANSPORTATION SERVICES  
CITY AND COUNTY OF HONOLULU

HONOLULU MUNICIPAL BUILDING  
640 SOUTH KING STREET  
HONOLULU, HAWAII 96813



FRANK F. FASI  
MAYOR

RECEIVED  
SEP 15 1992

JOSEPH M. MAGALDI, JR.  
DIRECTOR

AMAR SAPPAL  
DEPUTY DIRECTOR

PARAMETRIX, INC. 3600  
WASHINGTON PL92.1.297

September 11, 1992

Mr. F. J. Rodriguez  
Parametrix, Inc.  
1164 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813

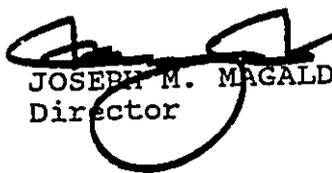
Dear Mr. Rodriguez:

Subject: Koko Head Rifle Range Safety Improvements  
Draft Environmental Assessment  
TMK: 3-9-12: 1

This is in response to your memorandum dated August 17, 1992 requesting our comments on the preliminary environmental assessment.

We understand that our department will not be required to maintain any portion of the roadway from Kalaniana'ole Highway to the parking lot. This being the case, we have no objections to the proposed improvements at this time.

Sincerely,

  
JOSEPH M. MAGALDI, JR.  
Director

**Parametrix, Inc.**

*Consultants in Engineering and Environmental Sciences*

1164 Bishop Street, Suite 1600 Honolulu, Hawaii 96813  
808-524-0594 • Fax: 808-523-2995



September 28, 1992

Mr. Joseph M. Magaldi, Jr., Director  
Department of Transportation Services  
City & County of Honolulu  
650 S. King Street  
Honolulu, HI 96813

Dear Mr. Magaldi,

Subject: Koko Head Rifle Range Safety Improvements,  
Draft Environmental Assessment

Thank you for your department's comments dated September 11, 1992 on the preliminary Environmental Assessment we have prepared for the Koko Head Rifle Range Safety Improvements. We have forwarded your comments to the Department of Parks & Recreation staff planners for their information. Your prompt and timely response is appreciated.

Thank you for your continuing interest and cooperation.

Very truly yours,

F. J. Rodriguez

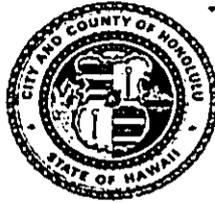
cc: Engineers Surveyors Hawaii, Inc.



Printed on Recycled Paper

DEPARTMENT OF GENERAL PLANNING  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET  
HONOLULU, HAWAII 96813



RECEIVED  
SEP 10 1992

BENJAMIN B. LEE  
CHIEF PLANNING OFFICER

PARAMETRIX, INC.  
HONOLULU

ROLAND D. LIBBY, JR.  
DEPUTY CHIEF PLANNING OFFICER

TH 8/92-2494

FRANK F. FASI  
MAYOR

September 4, 1992

Mr. F. J. Rodriguez  
Parametrix, Inc.  
1164 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813

Dear Mr. Rodriguez:

Preliminary Draft Environmental Assessment (DEA)  
for the Koko Head Regional Park,  
Koko Head Rifle Range Safety Improvements,  
Maunaloa, Oahu, Hawaii, Tax Map Key: 3-9-12: 1

In response to your memorandum of August 17, 1992, we have reviewed the subject DEA and have no comments to offer at this time.

Thank you for the opportunity to comment on this matter. Should you have any questions, please contact Tim Hata of our staff at 527-6070.

Sincerely,

A handwritten signature in black ink, appearing to read "Benjamin B. Lee".

BENJAMIN B. LEE  
Chief Planning Officer

BBL:ft

**Parametrix, Inc.**

*Consultants in Engineering and Environmental Sciences*

1164 Bishop Street, Suite 1600 Honolulu, Hawaii 96813  
808-524-0594 • Fax: 808-523-2995



September 28, 1992

Mr. Benjamin B. Lee, Chief Planning Officer  
Department of General Planning  
City & County of Honolulu  
650 S. King Street  
Honolulu, HI 96813

Dear Mr. Lee,

Subject: Koko Head Rifle Range Safety Improvements, Preliminary  
Environmental Assessment, Request for Comments

Thank you for your timely response to our request for comments on the subject project. We have forwarded your "No Comment" comment to the Parks & Recreation staff planners via Engineers Surveyors Hawaii, Inc. Again, thank you for your continuing interest and cooperation.

Very truly yours,

F. J. Rodriguez

cc: Engineers Surveyors Hawaii, Inc.

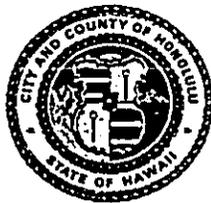


Printed on Recycled Paper

POLICE DEPARTMENT  
CITY AND COUNTY OF HONOLULU

1455 SOUTH BERETANIA STREET  
HONOLULU, HAWAII 96814 • ANFA CODE 18081 943-3111

FRANK F. FASI  
MAYOR



RECEIVED  
AUG 28 1992

MICHAEL S. NAKAMURA  
CHIEF

HAROLD M. KAWASAKI  
DEPUTY CHIEF

OUR REFERENCE KN-LK

PARAMETRIX, INC.  
HONOLULU

August 24, 1992

Mr. F. J. Rodriguez  
Environmental Planner  
Parametrix, Inc.  
1164 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813

Dear Mr. Rodriguez:

Subject: Koko Head Rifle Range Safety Improvements  
Environmental Assessment Preliminary Review

We have reviewed the materials for the above subject and find that the proposed changes will not significantly impact police services provided for the area.

In addition, we would like to suggest that those who are involved in designing the changes continue to work with our Training Division's Firearms Section.

Thank you for the opportunity to comment.

Sincerely,

MICHAEL S. NAKAMURA  
Chief of Police

By   
CHESTER E. HUGHES  
Assistant Chief of Police  
Support Services Bureau

1164 Bishop Street, Suite 1600 Honolulu, Hawaii 96813  
808-524-0594 • Fax: 808-523-2995



September 28, 1992

Chester E. Hughes, Assistant Chief of Police  
Police Department  
City & County of Honolulu  
801 S. Beretania Street  
Honolulu, HI 96813

Subject: Koko Head Rifle Range Safety Improvements, Preliminary  
Environmental Assessment Request for Comments

Dear Chief Hughes,

Thank you for your timely response to our request for comments on the preliminary Environmental Assessment for the above project. Your comments have been forwarded to the staff planners at the Department of Parks & Recreation via Engineers Surveyors Hawaii, Inc. The design engineering consultant will continue to maintain contact with the HPD Training Division's Firearms Section to insure that HPD's input is given ample opportunity for review and comment.

Again, thank you for your continuing interest and cooperation.

Very truly yours,

F. J. Rodriguez

cc: Engineers Surveyors Hawaii, Inc.



FIRE DEPARTMENT  
**CITY AND COUNTY OF HONOLULU**

1455 SOUTH BERETANIA STREET, ROOM 305  
HONOLULU, HAWAII 96814

FRANK F. FASI  
MAYOR



**RECEIVED**

AUG 31 1992

PARAMETRIX, INC.  
HONOLULU

LIONEL E. CAMARA  
FIRE CHIEF

DONALD S.M. CHANG  
DEPUTY FIRE CHIEF

August 26, 1992

F. J. Rodriguez  
Parametrix, Inc.  
1164 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813

Dear Mr. Rodriguez:

**SUBJECT: KOKO HEAD RIFLE RANGE SAFETY IMPROVEMENTS  
Environmental Assessment Preliminary Review**

We have reviewed the subject material provided and foresee no adverse impact in Fire Department facilities or services.

Access for fire apparatus, water supply and building construction shall be in conformance to existing codes and standards.

Should you have any questions, please call Assistant Chief Attilio Leonardi of our Administrative Services Bureau at 943-3838.

Sincerely,

A handwritten signature in cursive script that reads "Lionel E. Camara".

LIONEL E. CAMARA  
Fire Chief

AKL:ny

**Parametrix, Inc.**

1164 Bishop Street, Suite 1600 Honolulu, Hawaii 96813  
808-524-0594 • Fax: 808-523-2995

*Consultants in Engineering and Environmental Sciences*



September 28, 1992

Chief Lionel E. Camara  
Fire Department  
City & County of Honolulu  
1455 S. Beretania Street  
Honolulu, HI 96814

Dear Chief Camara,

Subject: Koko Head Rifle Range Safety Improvements Preliminary  
Environmental Assessment Request for Comments

Thank you for your timely response to our request for comments on the Koko Head Rifle Range Safety Improvements. Your request for compliance with applicable codes and standards has been forwarded to the design engineering consultant and also to the staff planners at the Department of Parks & Recreation. Thank you for your continuing interest and cooperation.

Very truly yours,

F. J. Rodriguez

cc: Engineers Surveyors Hawaii, Inc.



Printed on Recycled Paper

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU

630 SOUTH BERETANIA STREET

HONOLULU, HAWAII 96843



September 24, 1992

FRANK F. FASI, Mayor

WALTER O. WATSON, JR., Chairman  
MAURICE H. YAMASATO, Vice Chairman  
SISTER M. DAVILYN AH CHICK, O.S.F.  
JOHN W. ANDERSON, JR.  
REX D. JOHNSON  
MELISSA Y.J. LUM  
C. MICHAEL STREET  
KAZU HAYASHIDA  
Manager and Chief Engineer

RECEIVED  
SEP 25 1992

Mr. F. J. Rodriguez  
Parametrix, Inc.  
1164 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813

PARAMETRIX, INC.  
HONOLULU

Dear Mr. Rodriguez:

Subject: Your Letter of August 17, 1992 Regarding the Environmental Assessment for the Proposed Koko Head Rifle Range Safety Improvement Project, TMK: 3-9-12: Portion 1

Thank you for the opportunity to review and comment on the proposed safety improvement project. We have the following comments to offer:

1. There is a 4-inch compound water meter currently serving both the Koko Head District Park and the Koko Head Rifle Range.
2. The availability of additional water will be confirmed when the building permit is submitted for our review and approval. When additional water is made available, the applicant will be required to pay the prevailing Water System Facilities Charges and any applicable meter installation charges.
3. If a three-inch or larger meter is required, the construction drawings showing the installation of the meter should be submitted for our review and approval.
4. The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

If you have any questions, please contact Bert Kuioka at 527-5235.

Very truly yours,

KAZU HAYASHIDA  
Manager and Chief Engineer

**Parametrix, Inc.**

Consultants in Engineering and Environmental Sciences

1164 Bishop Street, Suite 1600 Honolulu, Hawaii 96813  
808-524-0594 • Fax: 808-523-2995



September 28, 1992

Mr. Kazu Hayashida  
Board of Water Supply  
City & County of Honolulu  
630 S. Beretania Street  
Honolulu, HI 96843

Dear Mr. Hayashida,

Subject: Koko Head Rifle Range Safety Improvements Preliminary  
Environmental Assessment Request for Comments

We have received your department's comments dated September 25, 1992 and we respond in the following:

1. 4-inch compound water meter availability is noted.
2. If additional water is required, the Range will comply with the System Facilities charge and any applicable meter installation charges.
3. All meter sizes will be indicated on the construction drawings for your review and approval.
4. We have advised the Fire Department that fire protection requirements will be adhered to in compliance with their standards.

Thank you for your comments and continuing concern.

Very truly yours,

F. J. Rodriguez

cc: Engineers Surveyors Hawaii, Inc.



Printed on Recycled Paper

DEPARTMENT OF LAND UTILIZATION  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET  
HONOLULU, HAWAII 96813 • (808) 523-4432



RECEIVED  
SEP 21 1992

DONALD A. CLEGG  
DIRECTOR

LORETTA K.C. CHEE  
DEPUTY DIRECTOR

PARAMETRIX, INC.  
HONOLULU

92-02276 (ASK)

FRANK F. FASI  
MAYOR

September 17, 1992

Mr. F. J. Rodriguez  
Parametrix, Inc.  
1164 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813

Dear Mr. Rodriguez:

Koko Head Rifle Range Safety Improvements  
Environmental Assessment Preliminary Review

This responds to your August 17, 1992 letter requesting our review of a preliminary Environmental Assessment (EA) for improvements at the Koko Head Rifle Range. We have reviewed the submitted material and offer the following comments:

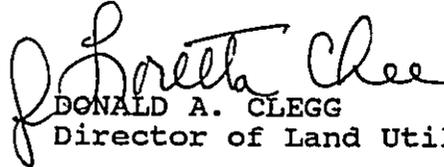
1. The EA should include a description of:
  - a. usage including hours of operation and identification of groups and individuals;
  - b. impacts to infrastructure, including the method of wastewater disposal;
  - c. the existing facility (an existing site plan, for example);
  - d. impacts to views; and
  - e. safety aspects including compliance with governmental regulatory requirements.
2. The project site is within the Special Management Area. Because the project cost exceeds \$125,000, a Major Special Management Area Use Permit is required prior to development.

Mr. F. J. Rodriguez  
Page 2

3. We note that the project is within and addressed as part of the Koko Head Regional Park Master Plan which was completed earlier this year. You should clarify whether the proposal constitutes implementation, in part of an adopted master plan or if this project consists of a separate effort.

Should you have questions regarding the above, you may contact Ardis Shaw-Kim of our staff at 527-5349.

Very truly yours,

  
DONALD A. CLEGG  
Director of Land Utilization

DAC:ct

A:koko2.as3



September 28, 1992

Mr. Donald A. Clegg, Director  
Department of Land Utilization  
City & County of Honolulu  
Honolulu, HI 96813

Dear Mr. Clegg,

**Subject: Koko Head Rifle Range Safety Improvements, Preliminary  
Environmental Assessment Request for Comments**

We have received your department's comments dated September 17, 1992 and we respond in the following:

1.a. The hours and usage by individuals, government, and private groups is:

Honolulu Police Department: 0745 to 1630 hours Monday through Friday  
Federal law enforcement agencies:  
State law enforcement agencies:

Private/civilian rifle clubs: 1200 to 1600 hours, Wednesday to Friday; 0800 to  
School Rifle teams: 1600 hours Saturdays, Sundays & Holidays  
Individual amateur shooters:

b. There will be no change in quantity or method treatment for wastewater since the scope of work is safety related changes and shifting of target venues. Cesspool disposal is presently in use and remain in use.

c. A site plan showing the existing range site will also be provided in the draft Environmental Assessment so that the proposed safety improvements will be more apparent.

d. There will be no change in the current view plane corridor since all venues are beneath the crater rim for obvious safety reasons. Activities are not visible from the highway or adjacent areas.





e. All current range safety procedures are still in force and under the jurisdiction of the Range Master who is on the premises at all times. Range users are for the most part trained prior to their coming to Koko Head, and their presence is to maintain a degree of skill pursuant to their vocation, i.e. law enforcement.

Other shooters are there for self improvement, and to practice for competition purposes. There are also recreational/hobby shooters, and high school rifle teams in training. All non-law enforcement shooters are under supervision of the Range Master or their coaches.

2. The Special Management Area (SMA) permit requirement is understood and an application is forthcoming .

3. This project is both an implementation of Regional Park Master Plan and a separate project. The Master Plan describes the activities within the crater as a rifle shooting range, and the safety improvements are to more efficiently use the range while mitigating potential safety problems.

Thank you for your specific concerns and continuing cooperation.

Very truly yours,

F. J. Rodriguez

cc: Engineers Surveyors Hawaii, Inc.

IX. LIST OF PREPARERS  
Department of Parks & Recreation

Engineers-Surveyors, Hawaii, Inc.  
Civil Engineering

Parametrix, Inc.  
Environmental Assessment



PARKS AND RECREATION  
COUNTY OF HONOLULU  
HONOLULU, HAWAII

# IMPROVEMENTS TO PISTOL RIFLE RANGE AT KOKO HEAD REGIONAL PARK

HONOLULU, OAHU, HAWAII  
NOVEMBER 1970

PREPARED BY  
CONVEYORS HAWAII, INC.  
EXHIBIT A  
PROJECT PLANS

\_\_\_\_\_  
PARKS AND RECREATION      DATE  
HONOLULU

\_\_\_\_\_  
DPW      DATE  
HONOLULU

INDEX OF DRAWINGS		
SHEET NUMBER	DRAWING NUMBER	DESCRIPTION
1	T-1	TITLE SHEET
2	C-1	NOTES
3	C-2	GENERAL PLAN
4	C-3	DEMOLITION PLAN
5	C-4	GRADING PLAN
6	C-5	GRADING PLAN
7	C-6	LAYOUT PLAN
8	C-7	LAYOUT PLAN
9	C-8	LAYOUT PLAN
10	C-9	PISTOL RANGE DETAILS
11	C-10	PISTOL RANGE WALL DETAILS
12	C-11	TRAP FIELD AND HOUSE DETAILS
13	C-12	SKEET FIELD AND HOUSE DETAILS
14	C-13	SAFETY FENCE DETAILS

SHEET 1 OF

DRAWING NUMBER TO KOKO HEAD RIFLE RANGE AT KOKO HEAD REGIONAL PARK

## GENERAL NOTES

1. CONTRACTOR SHALL VISIT THE SITE, VERIFY ALL EXISTING DIMENSIONS, AS BUILT CONDITIONS, STRUCTURES, SITE IMPROVEMENTS, ETC. PRIOR TO BIDDING.
2. CONTRACTOR SHALL COORDINATE HIS OPERATIONS WITH THOSE OF OTHER CONTRACTORS WHO MAY BE EMPLOYED ON ADJACENT OR RELATED PROJECTS OF THE CITY AND AVOID UNNECESSARY DELAY OR HINDERANCE IN THE PERFORMANCE OF THEIR RESPECTIVE CONTRACTS.
3. EXCEPT FOR THE PORTION OF THE PARK GROUND AND FACILITIES AFFECTED BY THIS CONTRACT, THE PARK FACILITIES SHALL BE IN USE BY THE PUBLIC. THE CONTRACTOR SHALL PROVIDE FULL COOPERATION WITH THE DEPARTMENT OF PARKS & RECREATION TO EFFECTIVELY MAINTAIN SUCH USE OF THE PARK FACILITY.
4. CONTRACTOR SHALL PATCH SLAB AND WALLS TO MATCH ADJACENT SURFACES WHERE REQUIRE DUE TO REMOVAL WORK. WOOD SURFACES SHALL BE PATCHED WITH PLASTIC WOOD WHERE REQUIRE DUE TO REMOVAL WORK.
5. EXTENT OF REMOVAL AS INDICATED IS APPROXIMATE. CONTRACTOR SHALL VERIFY THE EXTENT OF REMOVAL WORK TO PROPERLY ACCOMMODATE HIS METHOD OF CONSTRUCTING NEW WORK AS REQUIRED. ADDITIONAL REMOVAL AND PATCHING REQUIRED TO ACCOMMODATE CONSTRUCTION SHALL BE CONSIDERED INCIDENTAL TO THE NEW WORK.
6. ALL DRY ROT AND TERMITE DAMAGE OR EXTENSIVELY RUSTED SUBSTRUCTURE DISCOVERED DURING THE PROGRESS OF THE REMOVAL WORK SHALL BE REPORTED TO THE OFFICER-IN-CHARGE FOR INSPECTION AND RECOMMENDATION. FAILURE TO REPORT SUCH DAMAGE THAT RESULT IN POOR INSTALLATION OF NEW WORK SHALL BE MADE GOOD BY THE CONTRACTOR AT NO COST TO THE CITY AND COUNTY.
7. ALL NEW AND EXISTING EXPOSED CONC., C.M.U., CEM. WASH, METAL (EXCEPT STAINLESS STEEL AND COPPER) AND WOOD SURFACES SHALL RECEIVE APPROPRIATE SURFACE PREPARATION AND PAINTED UNLESS OTHERWISE INDICATED. FINISH HARDWARE AND PLUMBING FIXTURE FITTINGS SHALL NOT BE PAINTED.

## CONSTRUCTION NOTES

1. ALL APPLICABLE CONSTRUCTION WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1986, AND STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1984, AS AMENDED, OF THE DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU AND THE COUNTIES OF KAUAI, MAUI, AND HAWAII; ALSO PARKS STANDARDS DETAILS, MAY 1990, OF THE DEPT. OF PARKS AND RECREATION, CITY AND COUNTY OF HONOLULU.
2. THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN TO EXIST BY THE ENGINEER FROM HIS SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND DEPTHS OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREA. WHENEVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.
3. ALL EXISTING UTILITIES TO REMAIN IN USE, WHETHER OR NOT SHOWN ON THE PLANS, SHALL BE PROTECTED AT ALL TIMES BY THE CONTRACTOR DURING CONSTRUCTION UNLESS SPECIFIED ON THE PLANS TO BE ABANDONED. ANY DAMAGES TO THE EXISTING UTILITIES SHALL BE REPAIRED AND PAID FOR BY THE CONTRACTOR.
4. UNLESS RELOCATION IS CALLED FOR ON THE PLANS, EXISTING UTILITIES SHALL REMAIN IN-SERVICE AND IN PLACE. IF RELOCATION OF EXISTING UTILITIES IS REQUIRED BY THE CONTRACTOR; INTERRUPTION OF SERVICE SHALL BE KEPT TO A MINIMUM AND SHALL BE DONE AT THE CONTRACTOR'S EXPENSE AND ONLY WITH THE APPROVAL OF THE ARCHITECT/ENGINEER.
5. VERIFY AND CHECK ALL DIMENSIONS AND DETAILS SHOWN ON THE DRAWINGS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCY SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER FOR CLARIFICATION.
6. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PARKS & RECREATION FACILITY DEVELOPMENT DIVISION, CONSTRUCTION BRANCH SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
7. THE BENCH MARK FOR THIS PROJECT IS SHOWN ON DRAWING NO. C-2.
8. THE EXISTING IMPROVEMENTS ON THE PREMISES AND IN ADJACENT AREA THAT ARE NOT TO BE REMOVED, SHALL BE PRESERVED AND PROTECTED. ANY AND ALL DAMAGES RESULTING FROM THE CONTRACTOR'S CONSTRUCTION OPERATION SHALL BE REPLACED AND REPAIRED TO ORIGINAL CONDITION, TO THE SATISFACTION OF THE OWNER AND PAID FOR BY THE CONTRACTOR.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE WITH THE APPLICABLE PROVISIONS OF CHAPTER 54, WATER QUALITY STANDARDS, AND CHAPTER 55, WATER POLLUTION CONTROL OF TITLE 11, ADMINISTRATIVE RULES OF THE STATE DEPARTMENT OF HEALTH.

## GRADING NOTES

1. ALL GRADING WORK SHALL BE DONE IN ACCORDANCE WITH CHAPTER 23, GRADING, SOIL EROSION AND SEDIMENT CONTROL, OF THE REVISED ORDINANCES OF HONOLULU, 1978, AS AMENDED.
2. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS. THE COSTS INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE CHIEF ENGINEER SHALL BE PAYABLE BY THE CONTRACTOR.
3. THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH.
4. ALL SLOPES AND EXPOSED AREAS SHALL BE SODDED OR PLANTED AS SOON AS FINAL GRADES HAVE BEEN ESTABLISHED. PLANTING SHALL NOT BE DELAYED UNTIL ALL GRADING WORK HAS BEEN COMPLETED. GRADING TO FINAL GRADE SHALL BE CONTINUOUS, AND ANY AREA, WITHIN WHICH WORK HAS BEEN INTERRUPTED OR DELAYED, SHALL BE PLANTED.
5. FILLS ON SLOPES STEEPER THAN 5:1 SHALL BE KEYED.
6. THE CITY SHALL BE INFORMED OF THE LOCATION OF THE BORROW/DISPOSAL SITE FOR THE PROJECT WHEN THE APPLICATION FOR A GRADING PERMIT IS MADE. THE BORROW/DISPOSAL SITE MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
7. NO GRADING WORK SHALL BE DONE ON SATURDAYS, SUNDAYS, AND HOLIDAYS AT ANY TIME WITHOUT PRIOR NOTICE TO THE OFFICER-IN-CHARGE.
8. THE LIMITS OF THE AREA TO BE GRADED SHALL BE FLAGGED BEFORE THE COMMENCEMENT OF THE GRADING WORK.
9. ALL TOP AND BOTTOM OF SLOPES AND CHANGES IN PROFILE OF THE FINISHED GRADING WORK SHALL BE SMOOTHLY GRADED AND ROUNDED WITH A MINIMUM RADIUS OF 10- FEET.
10. THE CONTRACTOR SHALL OBTAIN A GRADING PERMIT PRIOR TO THE COMMENCEMENT OF GRADING WORK.
11. WHEN EXCAVATIONS ARE ADJACENT TO OR UNDER EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY SHEETING AND BRACING THE EXCAVATION AND STABILIZING THE EXISTING GROUND TO RENDER IT SAFE AND SECURE FROM POSSIBLE SLIDES, CAVE-INS AND SETTLEMENT, AND FOR PROPERLY SUPPORTING EXISTING STRUCTURES AND FACILITIES WITH BEAMS, STRUTS OR UNDERPINNING TO FULLY PROTECT IT FROM DAMAGE.

## ESTIMATED IN-PLACE EARTHWORK QUANTITIES

EXCAVATION	= 13,136 CU.YD.
EMBANKMENT	= 2741 CU.YD.
AREA OF GRADING	= 6.4 ACRES

1. THE EARTHWORK QUANTITIES ABOVE ARE APPROXIMATE AND ARE SHOWN FOR PERMIT PURPOSES ONLY. THE CONTRACTOR SHALL MAKE HIS DETERMINATION AND VERIFY THESE FIGURES.
2. THE CONTRACTOR SHALL MAKE HIS OWN DETERMINATION FOR IMPORT BORROW MATERIAL REQUIRED.

TEMPORARY EROSION CONTROL

CONFORMANCE WITH CHAPTER 23,  
CONTROL OF THE REVISED  
NEEDED.

AND DEBRIS RESULTING FROM HIS  
IES, ROADWAYS AND OTHER  
NECESSARY REMEDIAL ACTION BY  
Y THE CONTRACTOR.

SHALL KEEP THE PROJECT AREA  
NUISANCE. THE WORK SHALL BE  
CONTROL STANDARDS AND  
OF HEALTH.

BE SODDED OR PLANTED AS SOON  
PLANTING SHALL NOT BE  
EVEN COMPLETED. GRADING TO  
ANY AREA, WITHIN WHICH WORK  
LL BE PLANTED.

LL BE KEYS.

ATION OF THE BORROW/DISPOSAL  
TION FOR A GRADING PERMIT IS  
ALSO FULFILL THE REQUIREMENTS

TURSDAYS, SUNDAYS, AND HOLIDAYS  
IE OFFICER-IN-CHARGE.

SHALL BE FLAGGED BEFORE THE

ANGES IN PROFILE OF THE FINISHED  
ED AND ROUNDED WITH A

PERMIT PRIOR TO THE

UNDER EXISTING STRUCTURES OR  
SPONSIBLE FOR PROPERLY SHEETING  
IZING THE EXISTING GROUND TO  
IBLE SLIDES, CAVE-INS AND  
ING EXISTING STRUCTURES AND  
PINNING TO FULLY PROTECT IT FROM

1. FOLLOW SEQUENCE OF OPERATION AS RECOMMENDED ON PAGES 26 AND 27 OF THE SOIL EROSION STANDARDS AND GUIDELINES, DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU, NOVEMBER 1975.
2. THE CONTRACTOR SHALL MINIMIZE THE AMOUNT OF LAND TO BE EXPOSED AT ANY ONE TIME.
3. GRADING OPERATIONS SHALL PROCEED FROM THE HIGHER GROUND AREA FIRST, WHERE EXCAVATION OPERATIONS ARE NECESSARY. THE EXISTING VEGETATION ON THE LOWER AREA SHALL BE LEFT IN PLACE AS LONG AS FEASIBLE TO SERVE AS A FILTERING MEDIUM.
4. IF THE EXCAVATED MATERIAL FROM THE HIGHER AREA IS NEEDED TO FILL THE LOWER AREAS DESCRIBED IN #3 ABOVE, FILLING OPERATIONS SHALL BE DONE IN PHASES IN ORDER THAT EROSION AND SEDIMENTATION PROBLEMS CAN BE HELD TO A MINIMUM.
5. GRASSING (COMMON BERMUDA GRASS OR STAR GRASS CUTTINGS AT THE RATE OF 50 BUSHELS PER ACRE OR AN AVERAGE OF 2 SPRIGS PER SQUARE FOOT) OF ALL AREAS GRADED SHALL BE DONE IMMEDIATELY AFTER FINAL GRADES ARE ESTABLISHED.
6. GRADED AREAS THAT ARE NOT AT FINAL GRADE AND IS EXPECTED TO BE EXPOSED FOR MORE THAN 30 DAYS, SHALL BE MULCHED (AT THE RATE OF 45 CUBIC FEET PER 1,000 SQUARE FEET) IN ORDER TO PREVENT EROSION AND SILT RUNOFF.
7. THE ABOVE PROCEDURE FOR EROSION AND SEDIMENT CONTROL MAY BE REVISED BY THE CONTRACTOR TO CONFORM TO HIS GRADING OPERATION PROCEDURE, BUT ANY REVISION TO THE ABOVE SHALL BE SUBMITTED TO THE DEPARTMENT OF PUBLIC WORKS, CHIEF ENGINEER FOR APPROVAL, BY THE CONTRACTOR.

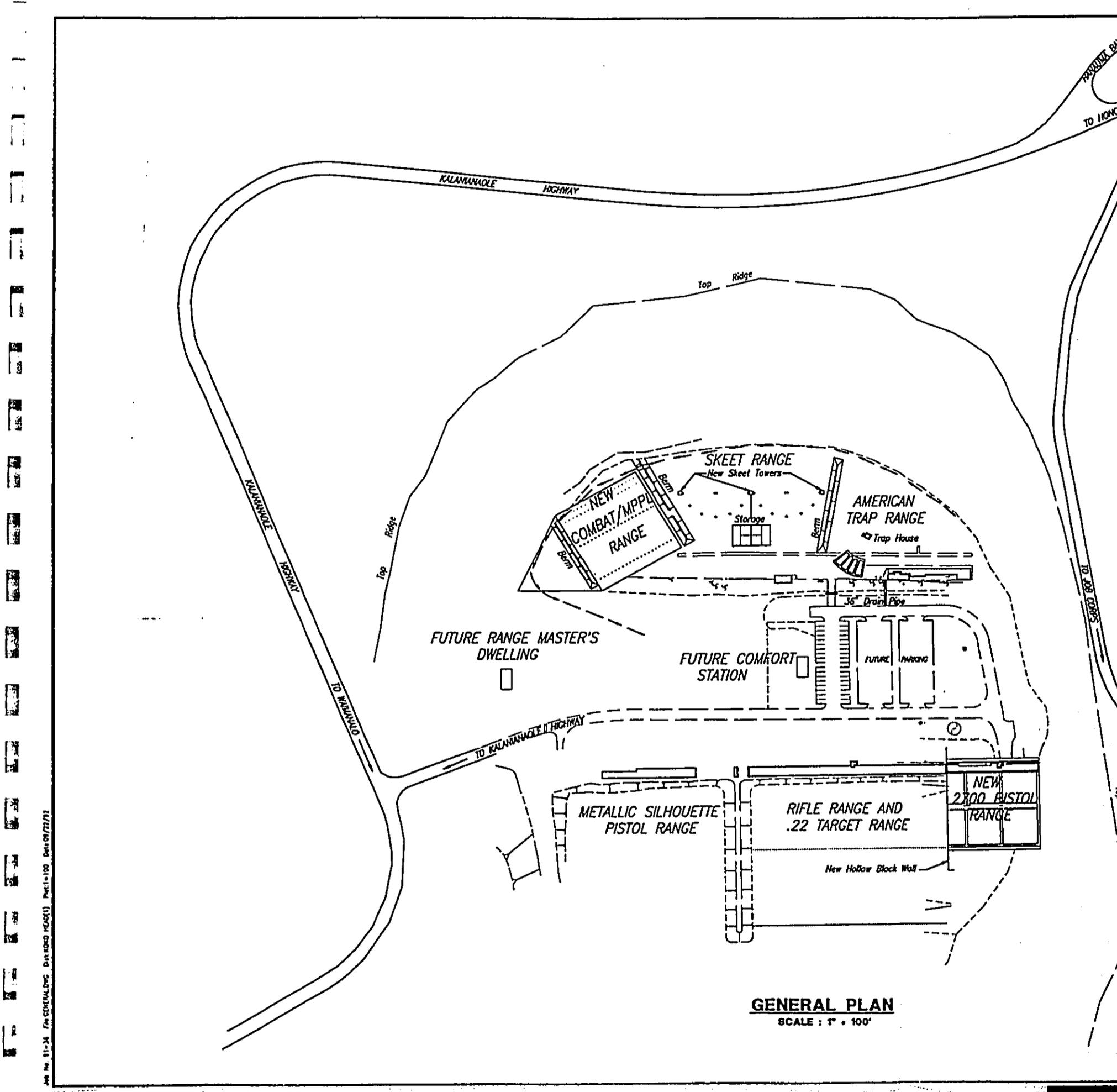
WORK QUANTITIES

- 13,138 CU.YD.
- 2741 CU.YD.
- 6.4 ACRES

ARE APPROXIMATE AND ARE SHOWN  
CONTRACTOR SHALL MAKE HIS  
FIGURES.

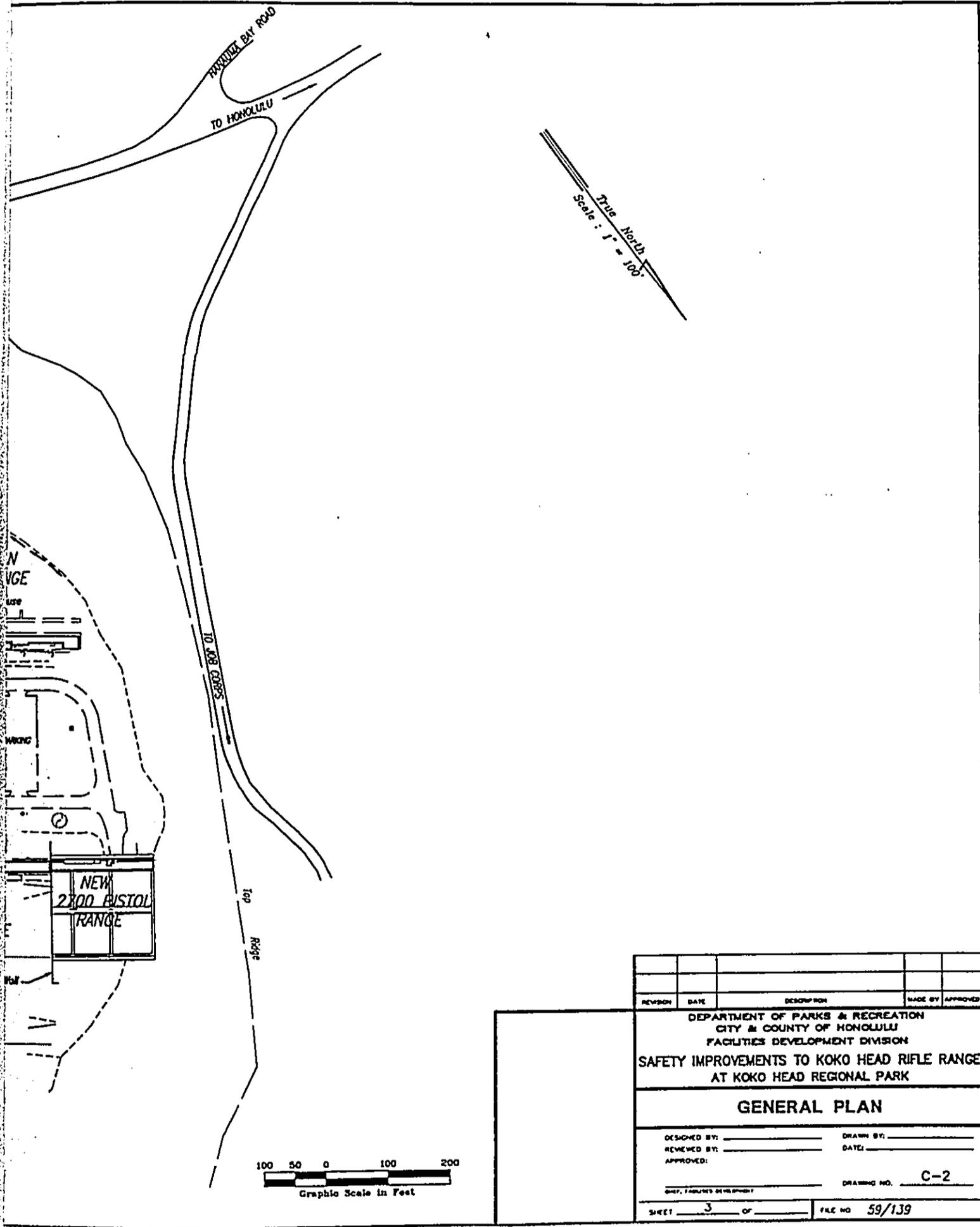
OWN DETERMINATION FOR IMPORT

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED
DEPARTMENT OF PARKS & RECREATION CITY & COUNTY OF HONOLULU FACILITIES DEVELOPMENT DIVISION SAFETY IMPROVEMENTS TO KOKO HEAD RIFLE RANGE AT KOKO HEAD REGIONAL PARK				
<b>NOTES</b>				
DESIGNED BY: _____		DRAWN BY: _____		
REVIEWED BY: _____		DATE: _____		
APPROVED: _____		DRAWING NO. <b>C-1</b>		
SHEET <b>2</b> OF _____ FILE NO. <b>59/139</b>				

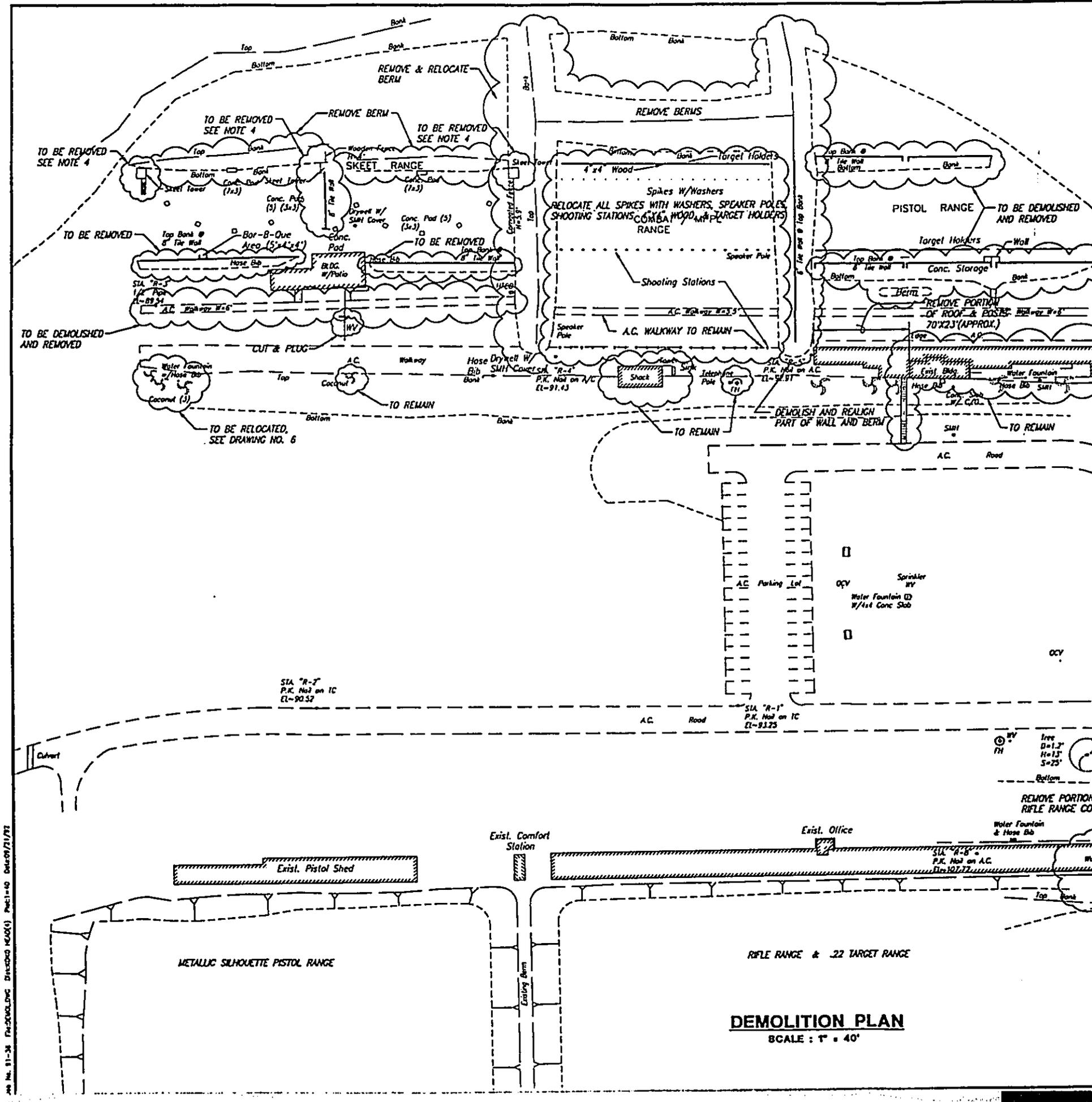


**GENERAL PLAN**  
SCALE: 1" = 100'

Job No. 81-38 P&C/CEM/DFC Dist 1000 H&A(1) Part 1-100 Date 09/27/71

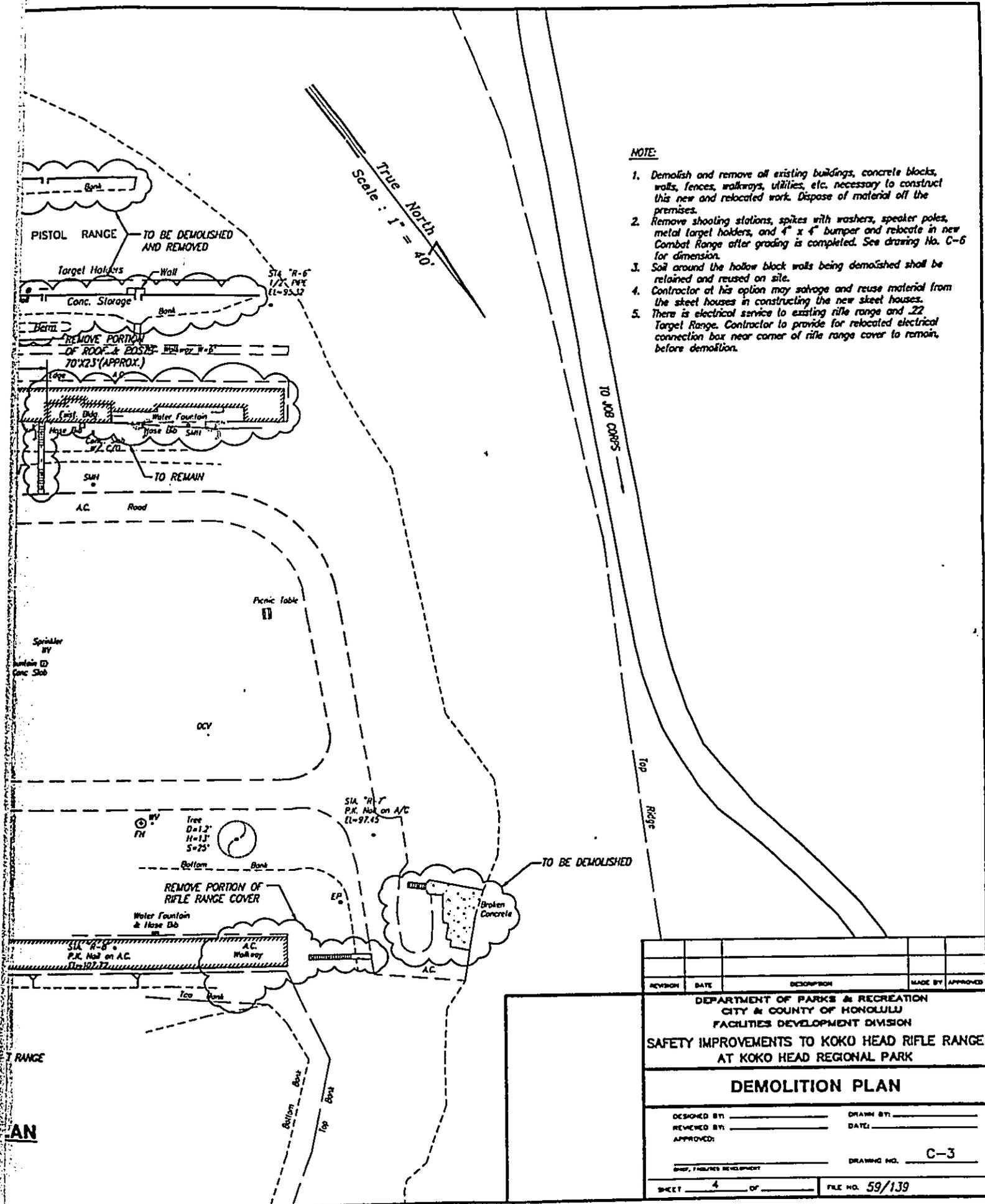


REVISION	DATE	DESCRIPTION	MADE BY	APPROVED
DEPARTMENT OF PARKS & RECREATION CITY & COUNTY OF HONOLULU FACILITIES DEVELOPMENT DIVISION <b>SAFETY IMPROVEMENTS TO KOKO HEAD RIFLE RANGE            AT KOKO HEAD REGIONAL PARK</b>				
<b>GENERAL PLAN</b>				
DESIGNED BY: _____	DRAWN BY: _____			
REVIEWED BY: _____	DATE: _____			
APPROVED: _____			DRAWING NO. <u>C-2</u>	
CHIEF, FACILITIES DEVELOPMENT				
SHEET <u>3</u> OF _____	FILE NO <u>59/139</u>			



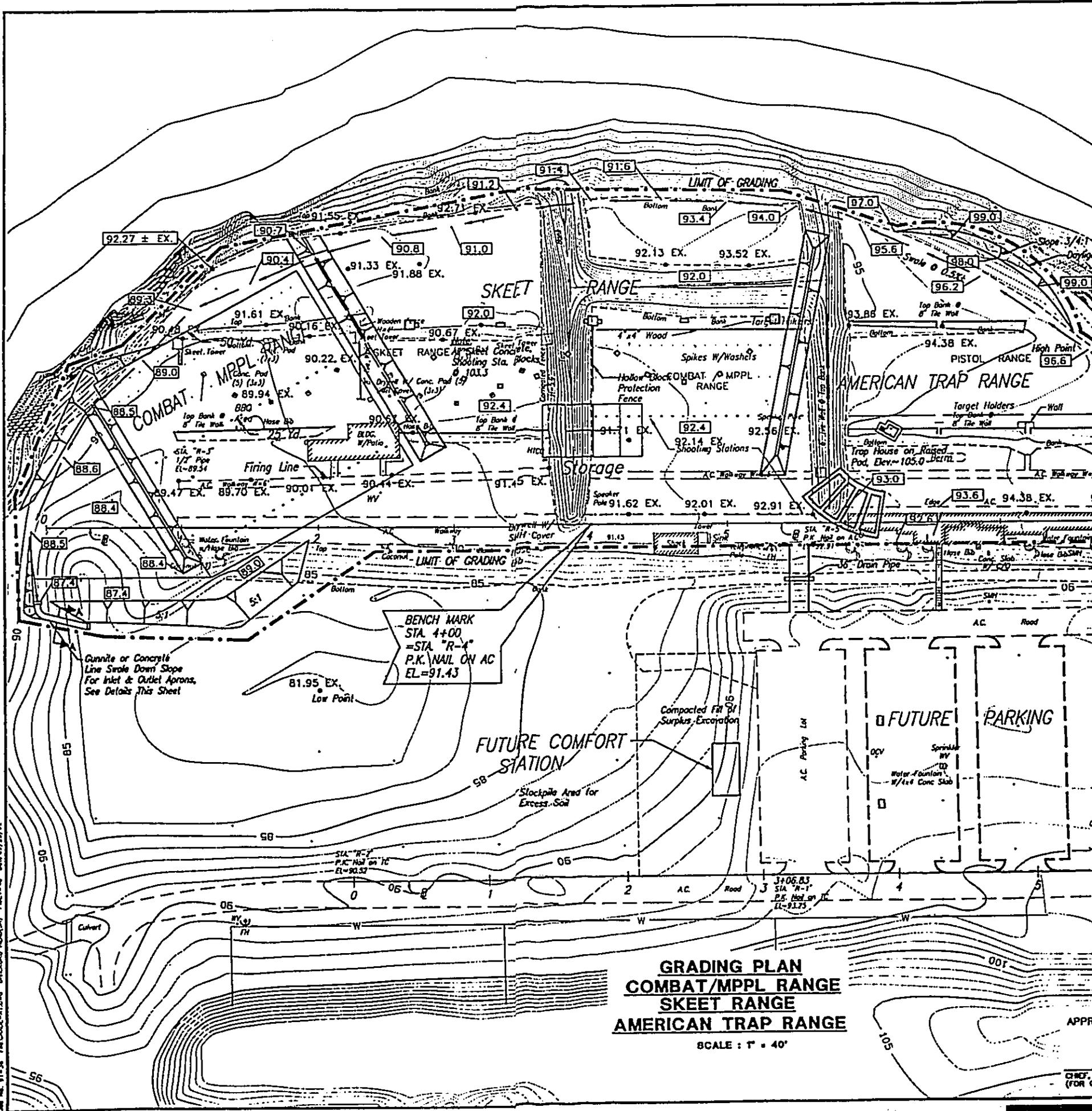
**DEMOLITION PLAN**  
SCALE: 1" = 40'

No. 81-38, FAC/2004/04/06, DESIGNED, DRAWN, CHECKED, DATE: 09/11/73

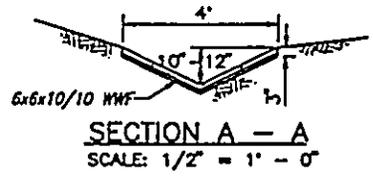
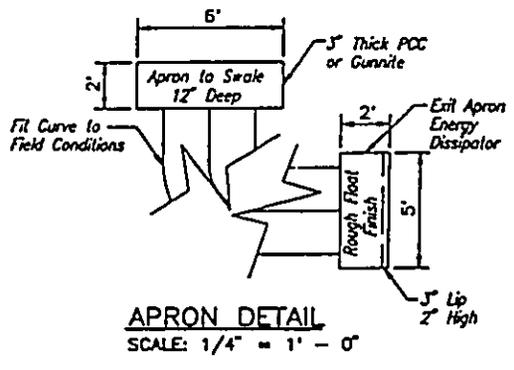
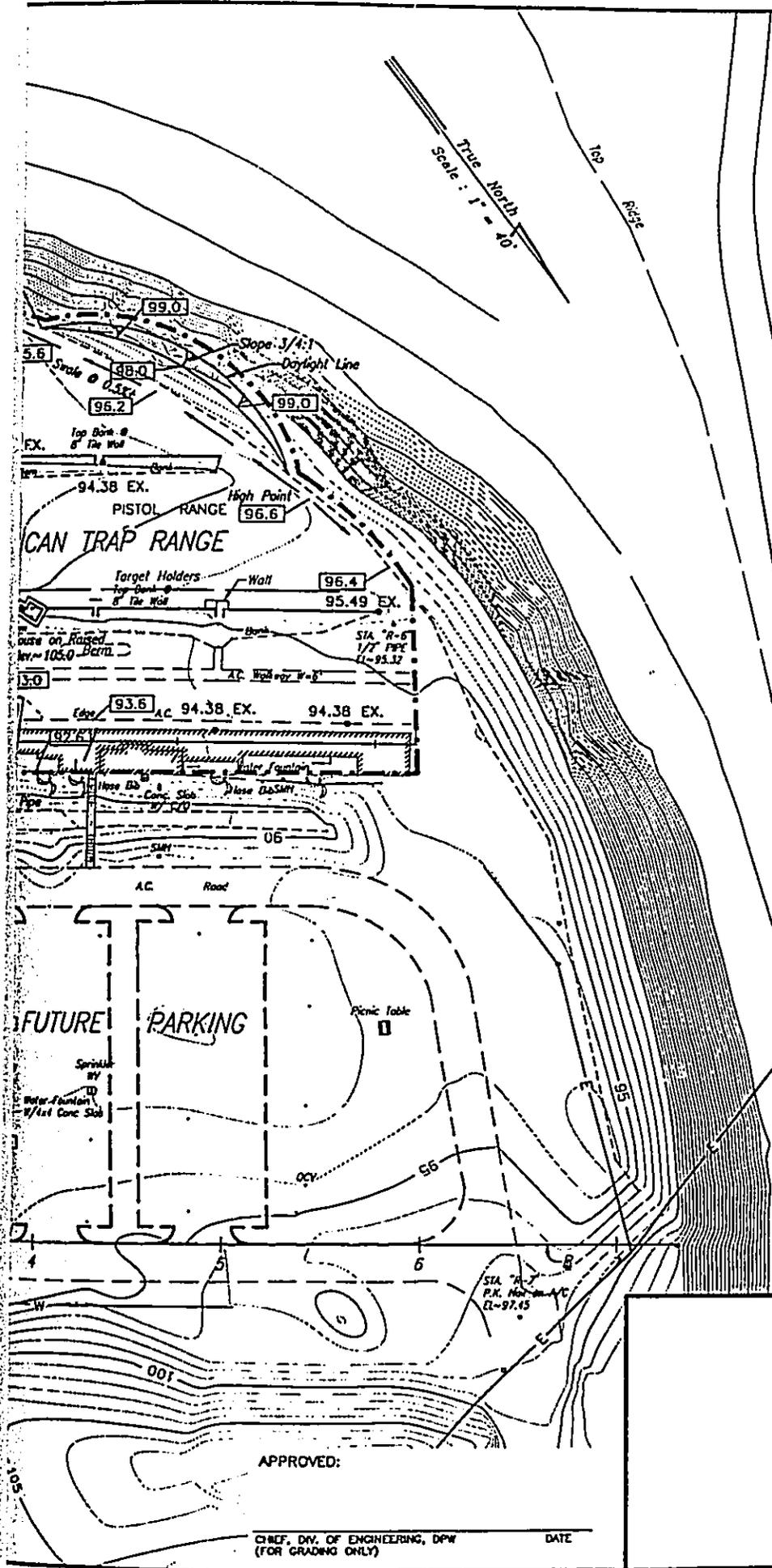


REVISION	DATE	DESCRIPTION	MADE BY	APPROVED
DEPARTMENT OF PARKS & RECREATION CITY & COUNTY OF HONOLULU FACILITIES DEVELOPMENT DIVISION <b>SAFETY IMPROVEMENTS TO KOKO HEAD RIFLE RANGE            AT KOKO HEAD REGIONAL PARK</b>				
<b>DEMOLITION PLAN</b>				
DESIGNED BY: _____		DRAWN BY: _____		
REVIEWED BY: _____		DATE: _____		
APPROVED: _____		DRAWING NO. <b>C-3</b>		
SHEET <b>4</b> OF _____		FILE NO. <b>59/139</b>		

444 No. 91-38 The CADUCEUS-11, Inc. Enclosure #4054A) Project No. 09/71/791



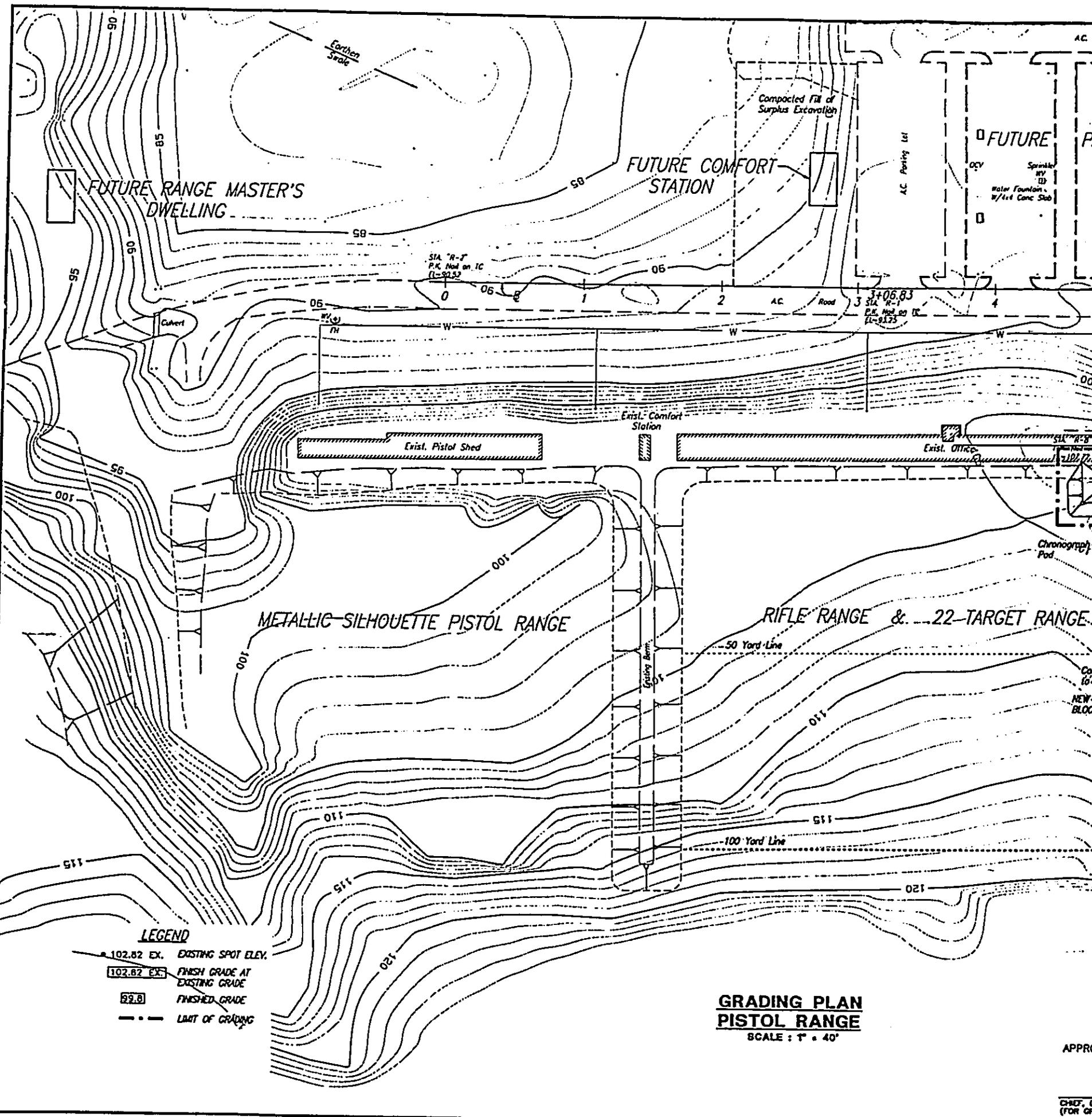
**GRADING PLAN**  
**COMBAT/MPPL RANGE**  
**SKEET RANGE**  
**AMERICAN TRAP RANGE**  
 SCALE: 1" = 40'



- LEGEND**
- 102.82 EX. EXISTING SPOT ELEV.
  - 102.82 EX. FINISH GRADE AT EXISTING GRADE
  - 99.8 FINISHED GRADE
  - - - LIMIT OF GRADING

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED
DEPARTMENT OF PARKS & RECREATION CITY & COUNTY OF HONOLULU FACILITIES DEVELOPMENT DIVISION <b>SAFETY IMPROVEMENTS TO KOKO HEAD RIFLE RANGE            AT KOKO HEAD REGIONAL PARK</b>				
<b>GRADING PLAN</b>				
DESIGNED BY: _____		DRAWN BY: _____		
REVIEWED BY: _____		DATE: _____		
APPROVED: _____		DRAWING NO. C-4		
SHEET 5 OF _____		FILE NO. 59/139		

Job No. 91-38 P.C. 0802-81-DWG D.W. 0802 HEAD(S) P. 1 of 40 Date: 07/23/72



FUTURE RANGE MASTER'S DWELLING

FUTURE COMFORT STATION

FUTURE PA...

METALLIC-SILHOUETTE PISTOL RANGE

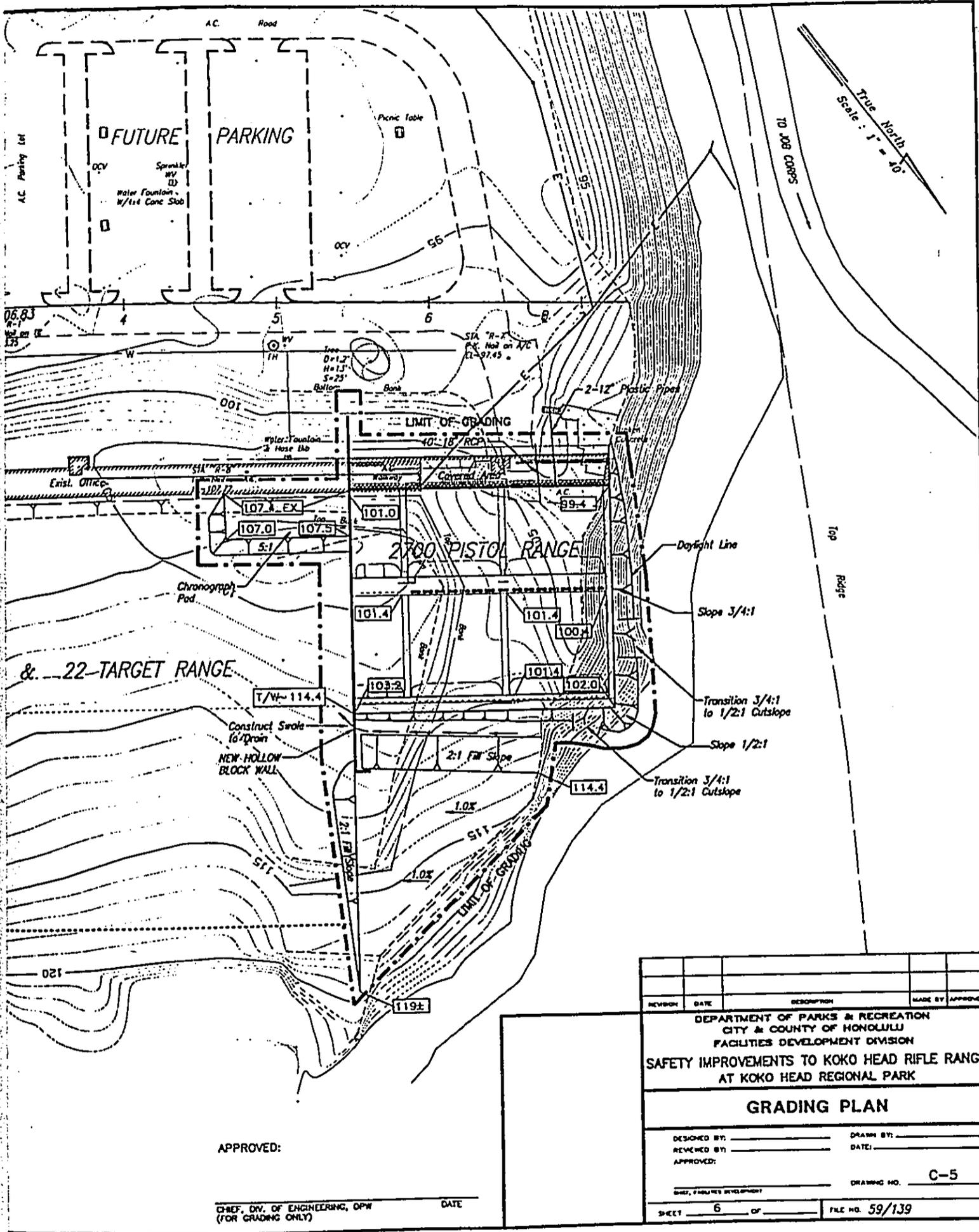
RIFLE RANGE & .22-TARGET RANGE

- LEGEND**
- 102.82 EX. EXISTING SPOT ELEV.
  - 102.82 EX. FINISH GRADE AT EXISTING GRADE
  - 99.8 FINISHED GRADE
  - LIMIT OF GRADING

**GRADING PLAN  
PISTOL RANGE**  
SCALE: 1" = 40'

APPRO...

CHIEF, OF  
(FOR GRA...



True North  
Scale: 1" = 10'

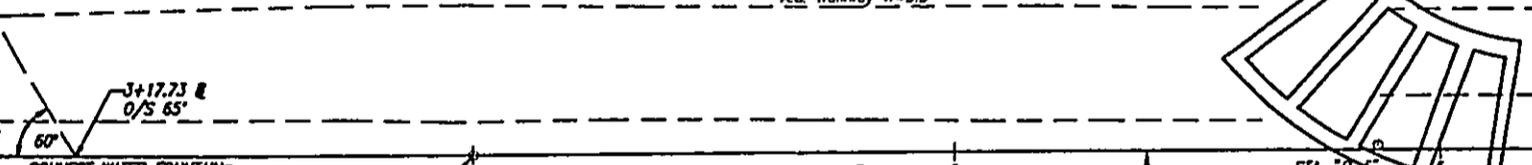
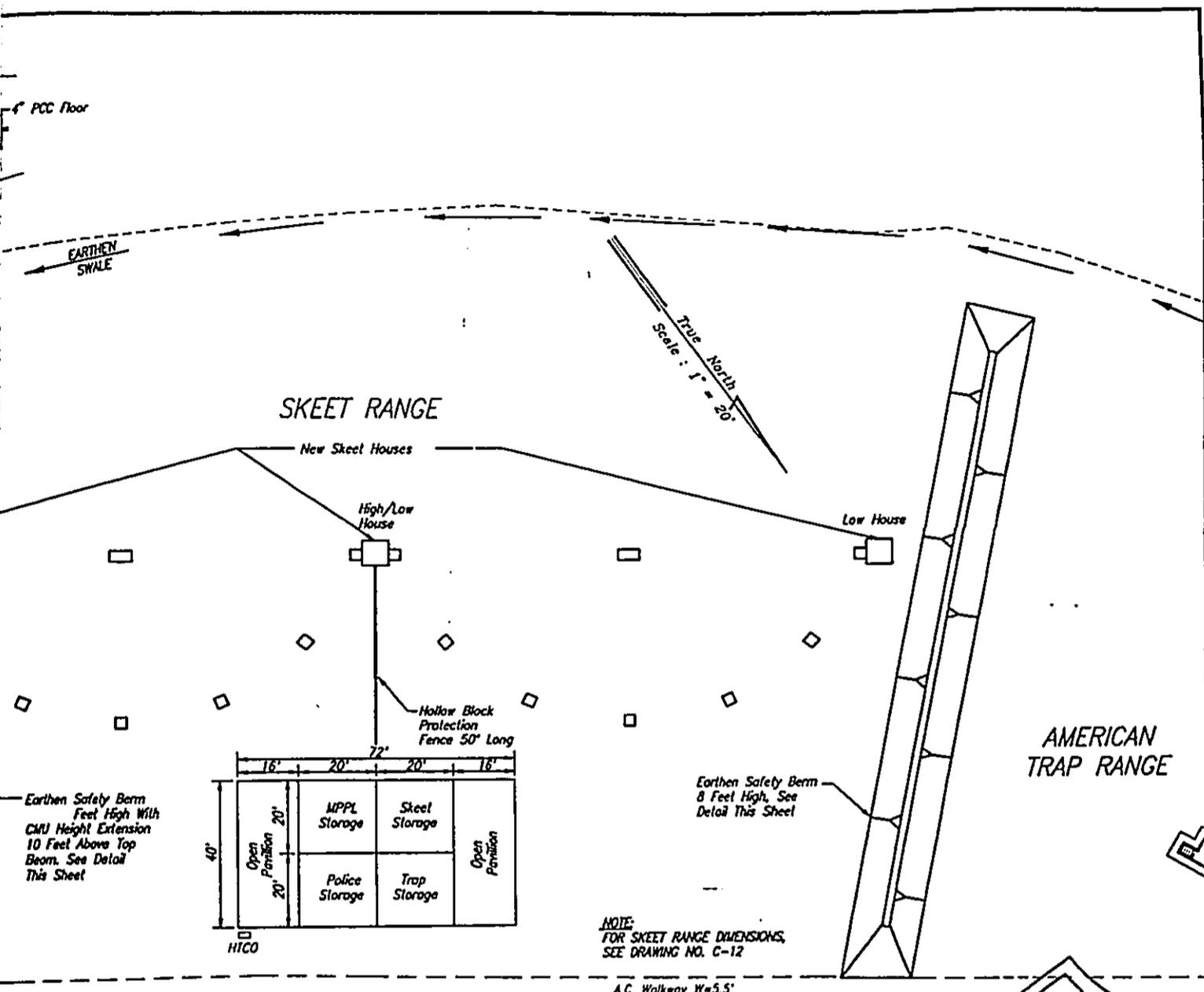
10' JOB CORRS

Top Ridge

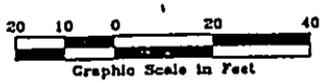
APPROVED: \_\_\_\_\_  
 CHIEF, DIV. OF ENGINEERING, OPW (FOR GRADING ONLY) DATE \_\_\_\_\_

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED
DEPARTMENT OF PARKS & RECREATION CITY & COUNTY OF HONOLULU FACILITIES DEVELOPMENT DIVISION <b>SAFETY IMPROVEMENTS TO KOKO HEAD RIFLE RANGE            AT KOKO HEAD REGIONAL PARK</b>				
<b>GRADING PLAN</b>				
DESIGNED BY: _____	DRAWN BY: _____		DATE: _____	
REVIEWED BY: _____	APPROVED: _____		DRAWING NO. C-5	
SHEET, FACILITIES DEVELOPMENT				
SHEET 6	OF	FILE NO. 59/139		



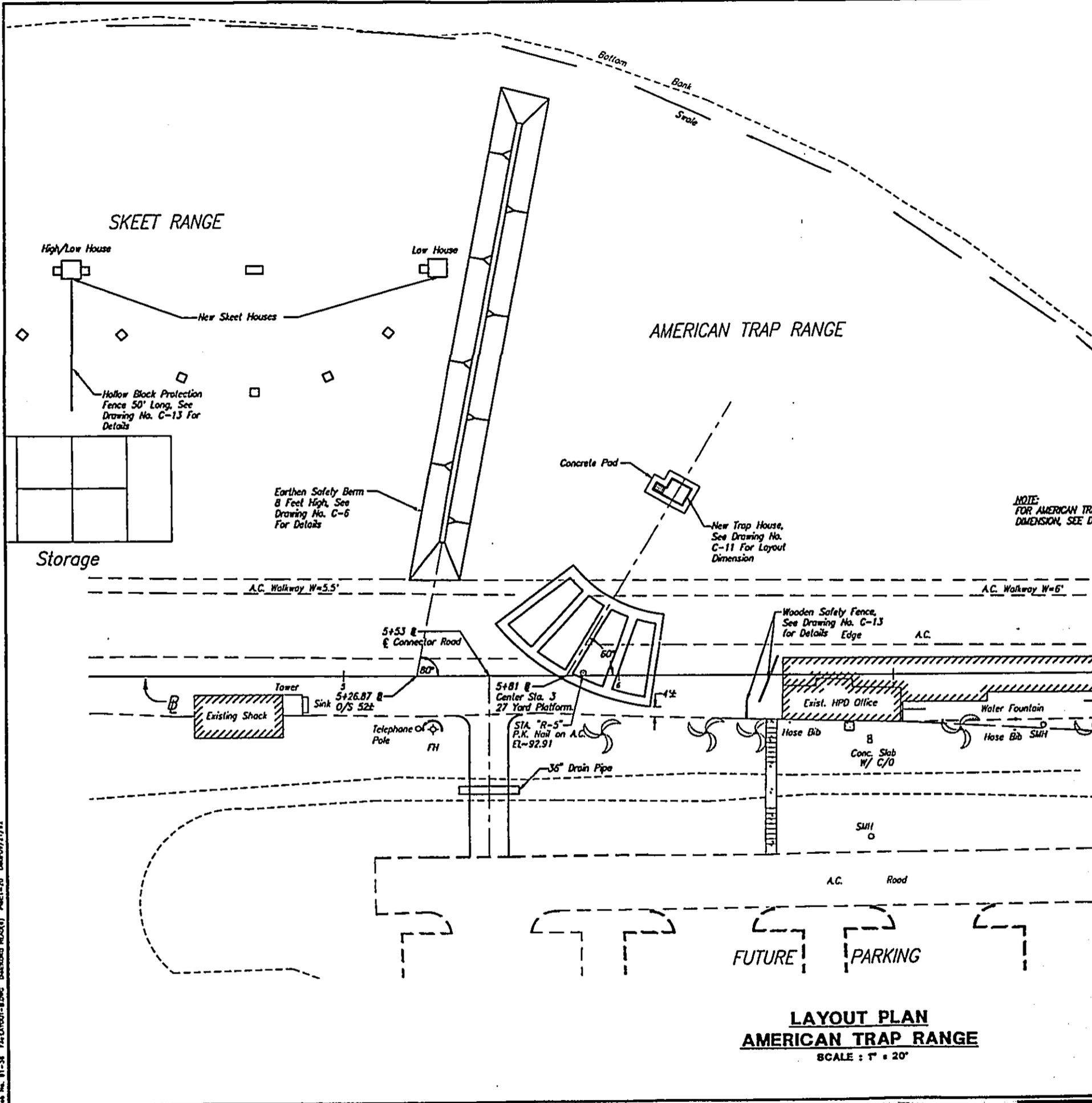


**BENCH MARK**  
 STA: 4+00  
 =STA. "R-4"  
 P.K. NAIL ON AC  
 EL.=91.43



REVISION	DATE	DESCRIPTION	MADE BY	APPROVED
DEPARTMENT OF PARKS & RECREATION CITY & COUNTY OF HONOLULU FACILITIES DEVELOPMENT DIVISION <b>SAFETY IMPROVEMENTS TO KOKO HEAD RIFLE RANGE            AT KOKO HEAD REGIONAL PARK</b>				
<b>LAYOUT PLAN</b>				
DESIGNED BY:		DRAWN BY:		
REVIEWED BY:		DATE:		
APPROVED:		DRAWING NO.	C-6	
SHEET 7 OF		FILE NO. 59/139		

ND



NOTE:  
FOR AMERICAN TRAP  
DIMENSION, SEE DR

**LAYOUT PLAN**  
**AMERICAN TRAP RANGE**  
SCALE : 1" = 20'

Job No. 81-26 For LAYOUT-B.DWG. DATE: 09/21/71

True North  
Scale: 1" = 20'

Top Ridge

TO JOB CORRS

NOTE:  
FOR AMERICAN TRAP RANGE  
DIMENSION, SEE DRAWING NO. C-11

STA. "R-6"  
1/2" PIPE  
El. ~ 95.32

Bottom Bank

A.C. Walkway W=6'

A.C.

Water Fountain

Hose Bib SMH

Road

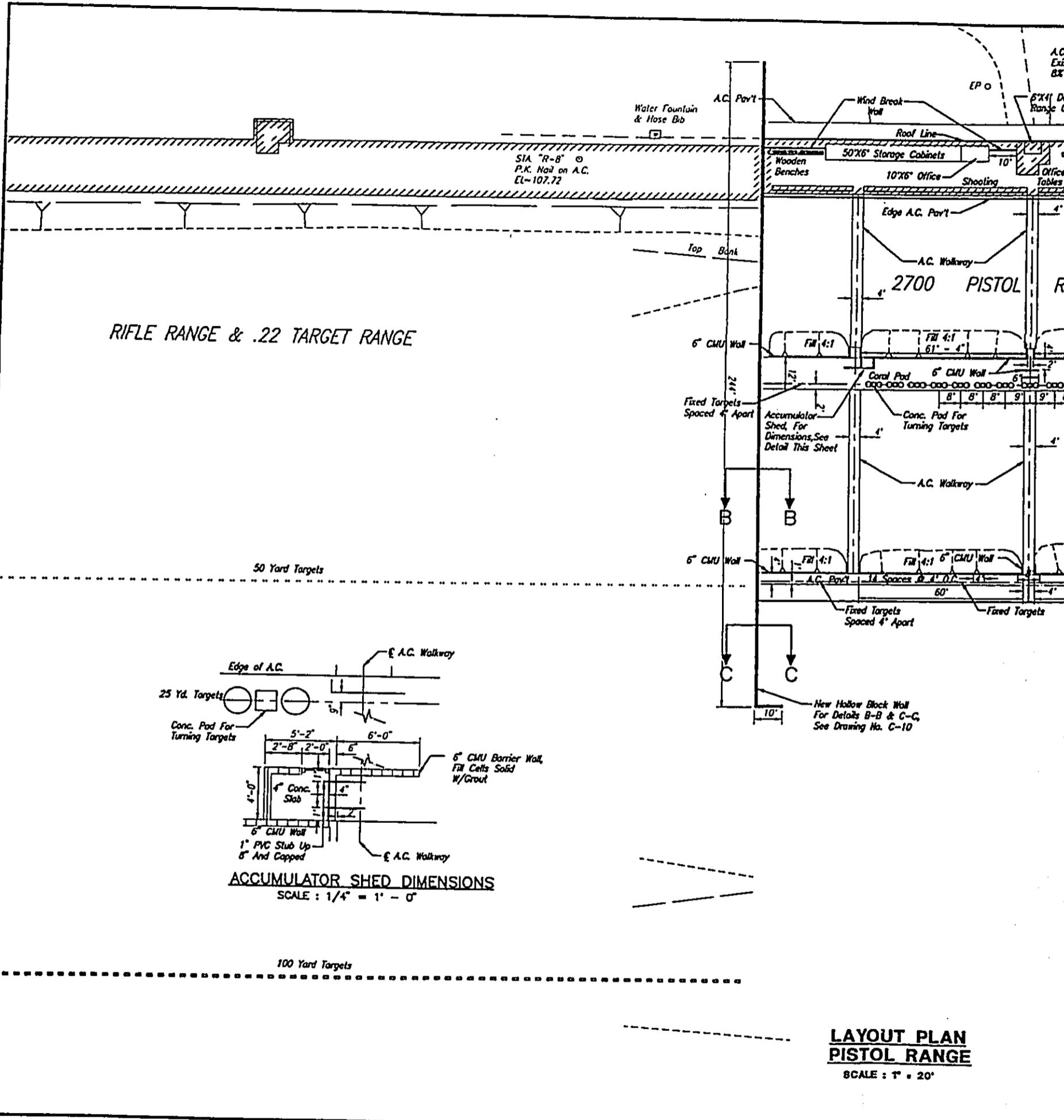
KING

LAN  
P RANGE

20'



REVISION	DATE	DESCRIPTION	MADE BY	APPROVED
DEPARTMENT OF PARKS & RECREATION CITY & COUNTY OF HONOLULU FACILITIES DEVELOPMENT DIVISION <b>SAFETY IMPROVEMENTS TO KOKO HEAD RIFLE RANGE            AT KOKO HEAD REGIONAL PARK</b>				
<b>LAYOUT PLAN</b>				
DESIGNED BY:			DRAWN BY:	
REVIEWED BY:			DATE:	
APPROVED:			DRAWING NO.	C-7
SHEET 8 OF			FILE NO. 59/139	



RIFLE RANGE & .22 TARGET RANGE

2700 PISTOL RANGE

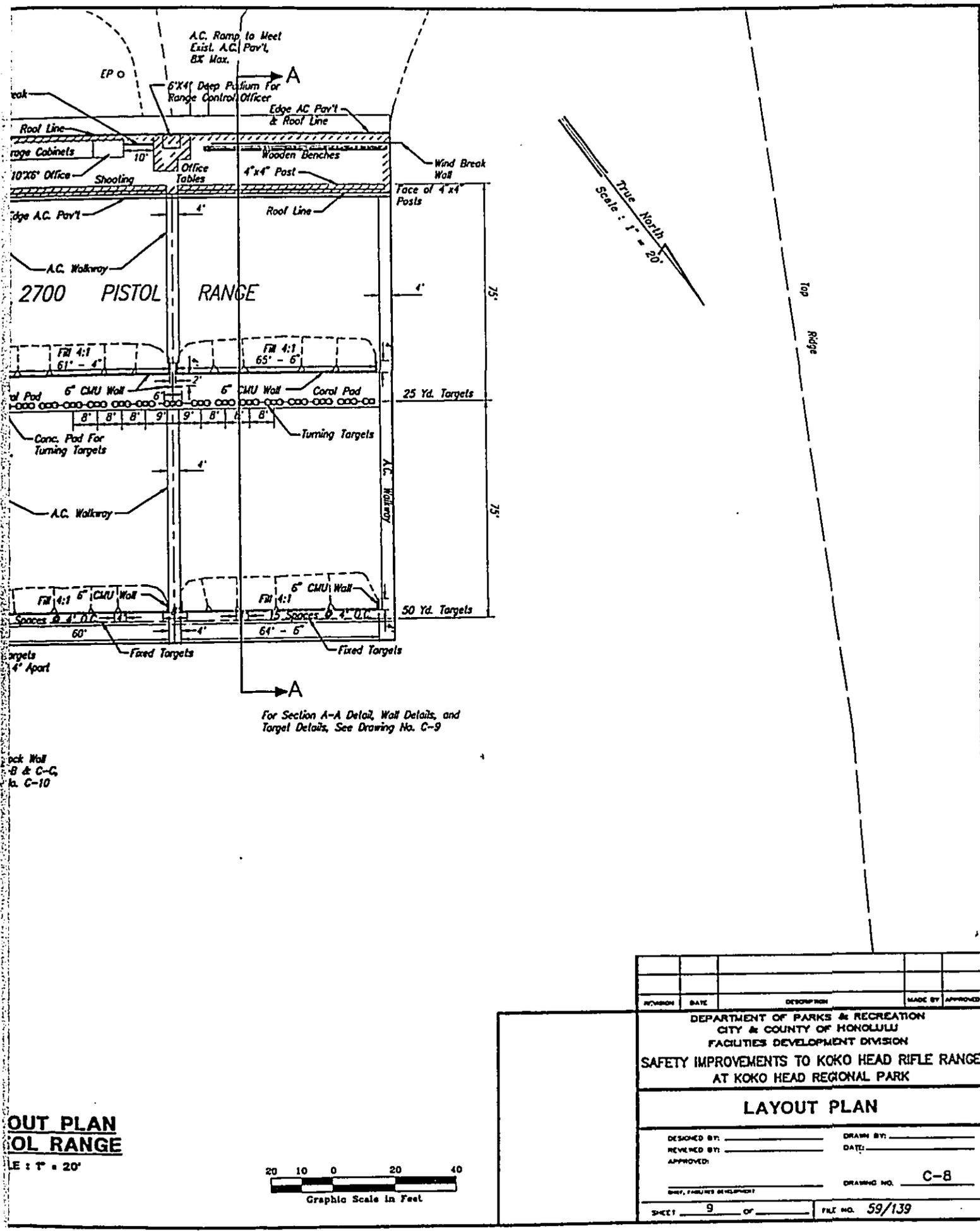
ACCUMULATOR SHED DIMENSIONS

SCALE : 1/4" = 1' - 0"

LAYOUT PLAN  
PISTOL RANGE

SCALE : 1" = 20'

Job No. 81-35 PLS/UT/PL-CL/DC Det. 1000 KAS(1) Part 1-20 Date 07/31/72

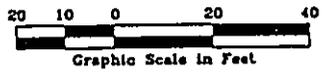


True North  
Scale: 1" = 20'

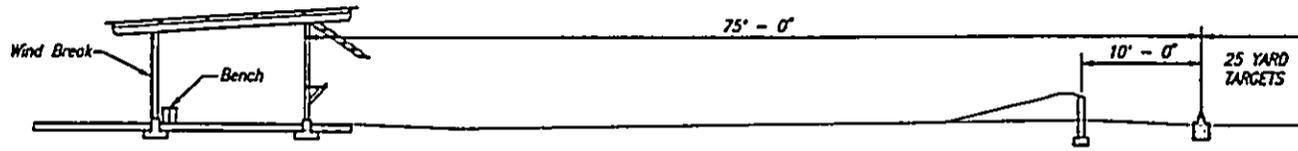
Block Wall  
B & C-C  
to C-10

For Section A-A Detail, Wall Details, and  
Target Details, See Drawing No. C-9

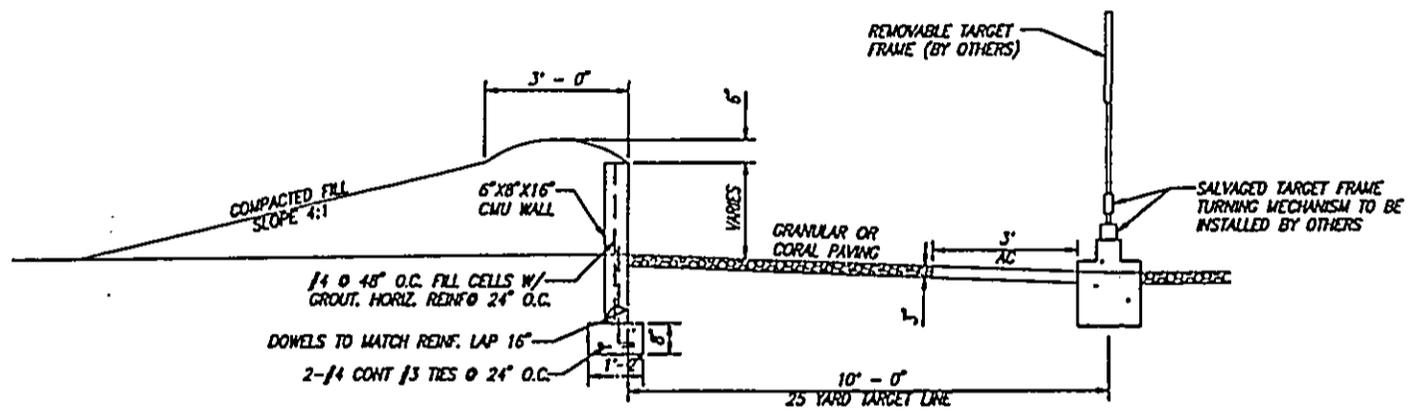
**OUT PLAN**  
**PISTOL RANGE**  
Scale: 1" = 20'



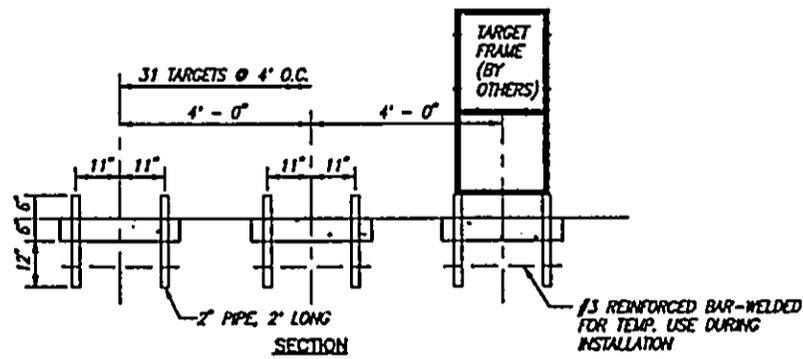
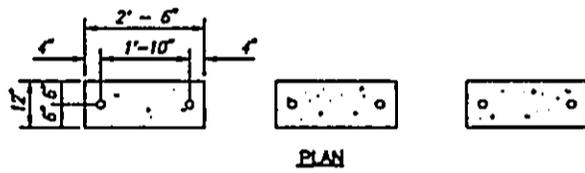
DIVISION	DATE	DESCRIPTION	MADE BY	APPROVED
DEPARTMENT OF PARKS & RECREATION CITY & COUNTY OF HONOLULU FACILITIES DEVELOPMENT DIVISION <b>SAFETY IMPROVEMENTS TO KOKO HEAD RIFLE RANGE            AT KOKO HEAD REGIONAL PARK</b>				
<b>LAYOUT PLAN</b>				
DESIGNED BY:	_____	DRAWN BY:	_____	
REVIEWED BY:	_____	DATE:	_____	
APPROVED:	_____			
SHEET 9 OF _____			DRAWING NO. C-8	
FILE NO. 59/139				



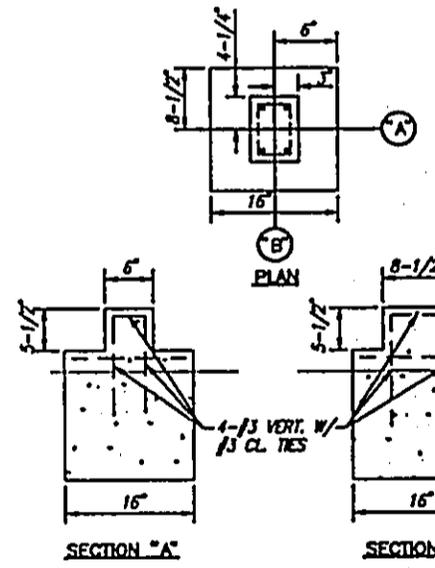
SECTION A-A  
TYPICAL CROSS SECTION  
SCALE: 1/8" = 1' - 0"



TYPICAL SECTION @ 25 YD TARGET BUNKER  
SCALE: 1/2" = 1' - 0"

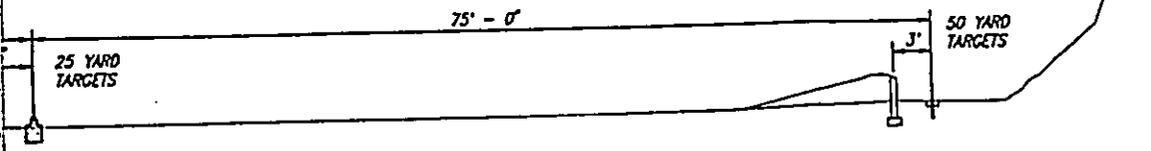


50-YD PISTOL RANGE BUTT  
AND 25-YD FIXED TARGET FRAME HOLDER  
SCALE: 1/2" = 1' - 0"

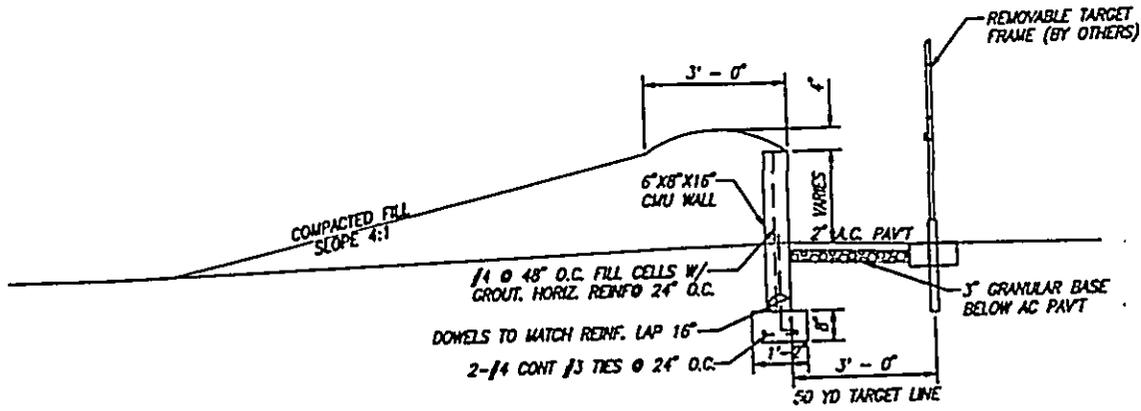


SECTION A-A  
TYP. CONC. PAD FOR  
TURNING TARGETS DETAILS  
SCALE: 1" = 1' - 0"

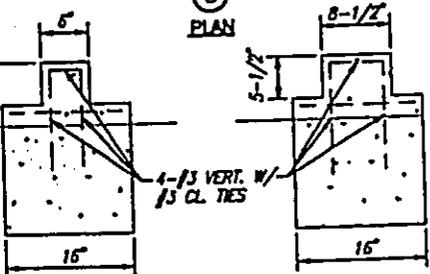
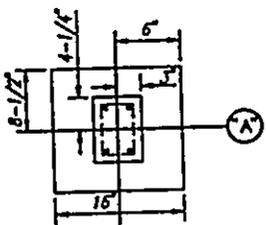
Job No. 81-38 Proj. PIST-BE-LONG Det. 02/21/71



A-A  
SS SECTION  
= 1' - 0"

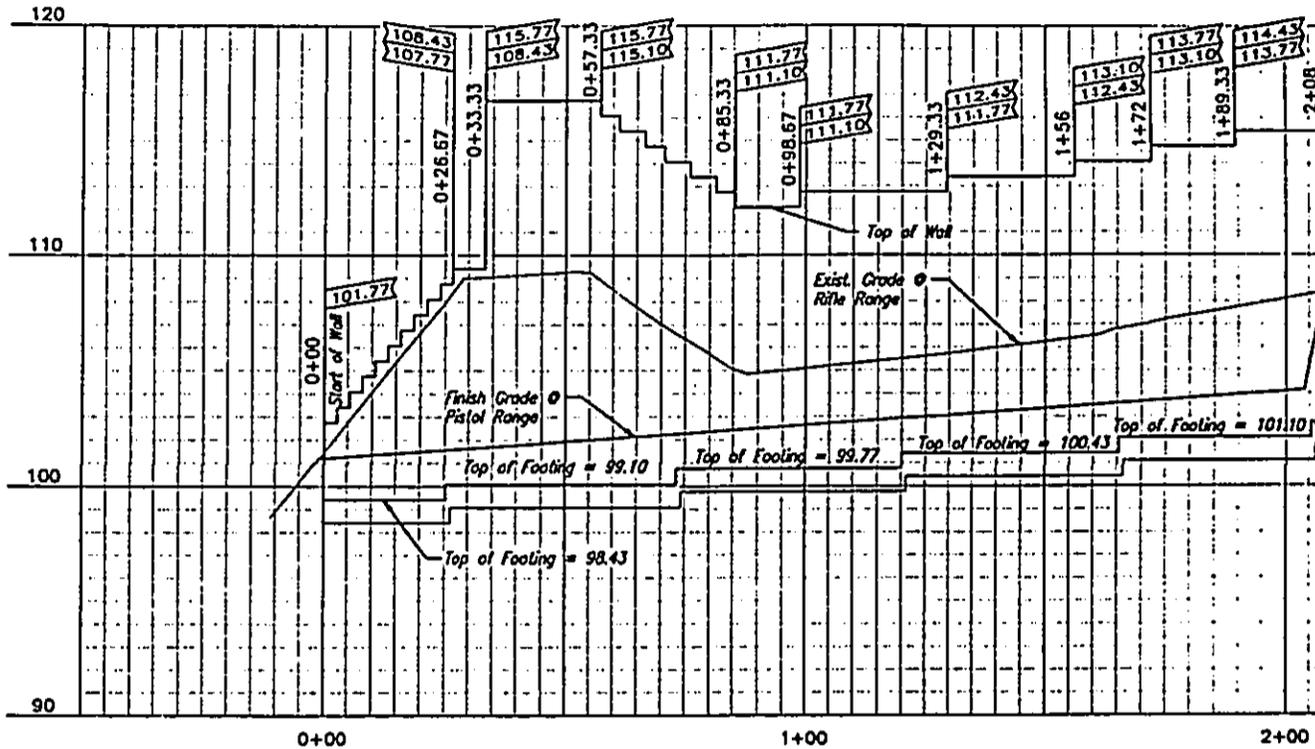


TYPICAL SECTION @ 50 YD TARGET BUNKER  
SCALE : 1/2" = 1' - 0"

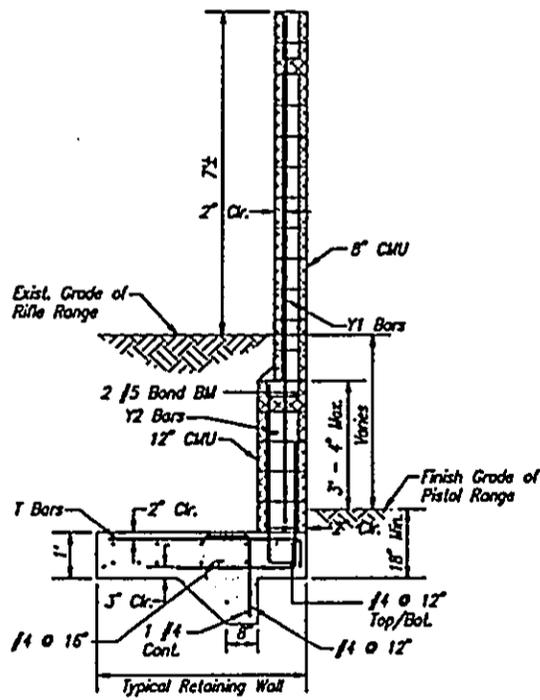


TYP. CONC. PAD FOR  
TURNING TARGETS DETAILS  
SCALE : 1" = 1' - 0"

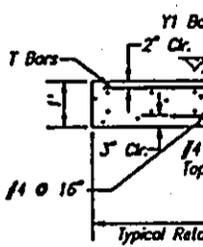
REVISION	DATE	DESCRIPTION	MADE BY	APPROVED
DEPARTMENT OF PARKS & RECREATION CITY & COUNTY OF HONOLULU FACILITIES DEVELOPMENT DIVISION SAFETY IMPROVEMENTS TO KOKO HEAD RIFLE RANGE AT KOKO HEAD REGIONAL PARK				
<b>PISTOL RANGE DETAILS</b>				
DESIGNED BY: _____	DRAWN BY: _____		DATE: _____	
REVIEWED BY: _____	APPROVED: _____		DRAWING NO. <b>C-9</b>	
SHEET <b>10</b> OF _____		FILE NO. <b>59/139</b>		



WALL PROFILE  
AT PISTOL RANGE  
SCALE: 1" = 20' HORIZ  
1" = 4' VERT

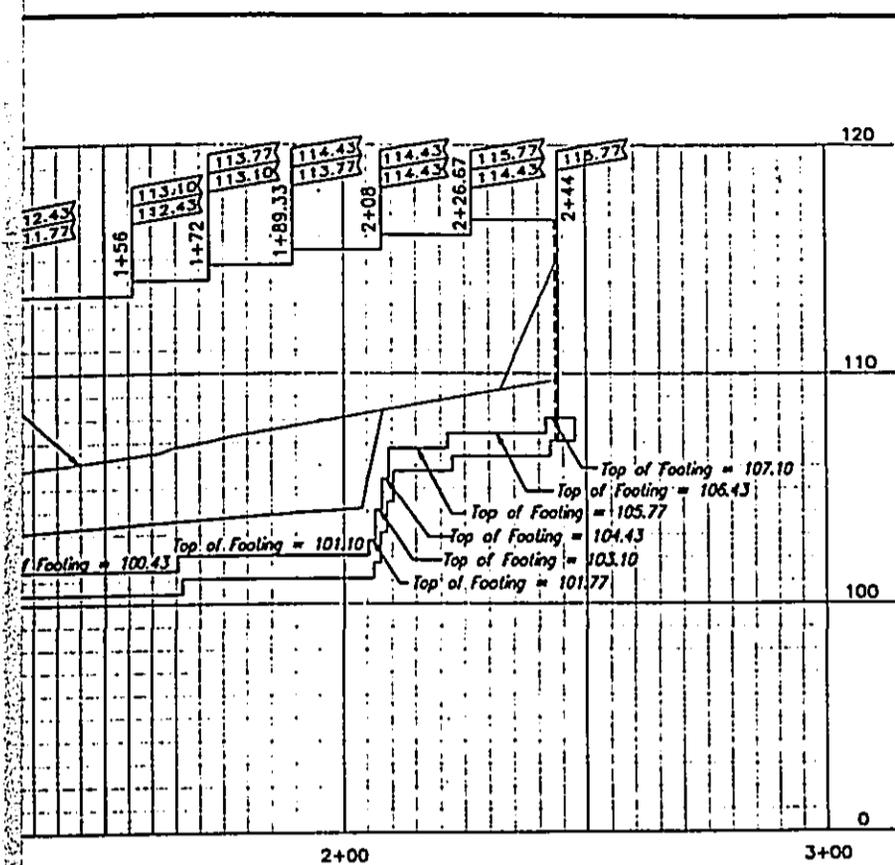


SECTION B - B  
AT PISTOL RANGE  
SCALE: 1/2" = 1' - 0"

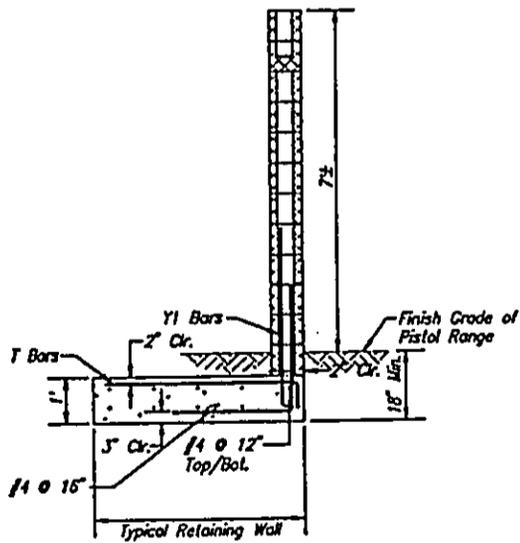


SECTION  
AT PISTOL RANGE  
SCALE: 1/2" = 1' - 0"

Job No. 81-24 (R) WALL-BUILDING 04-1000 (M) (S) Pwd-1-20 Date: 01/23/71



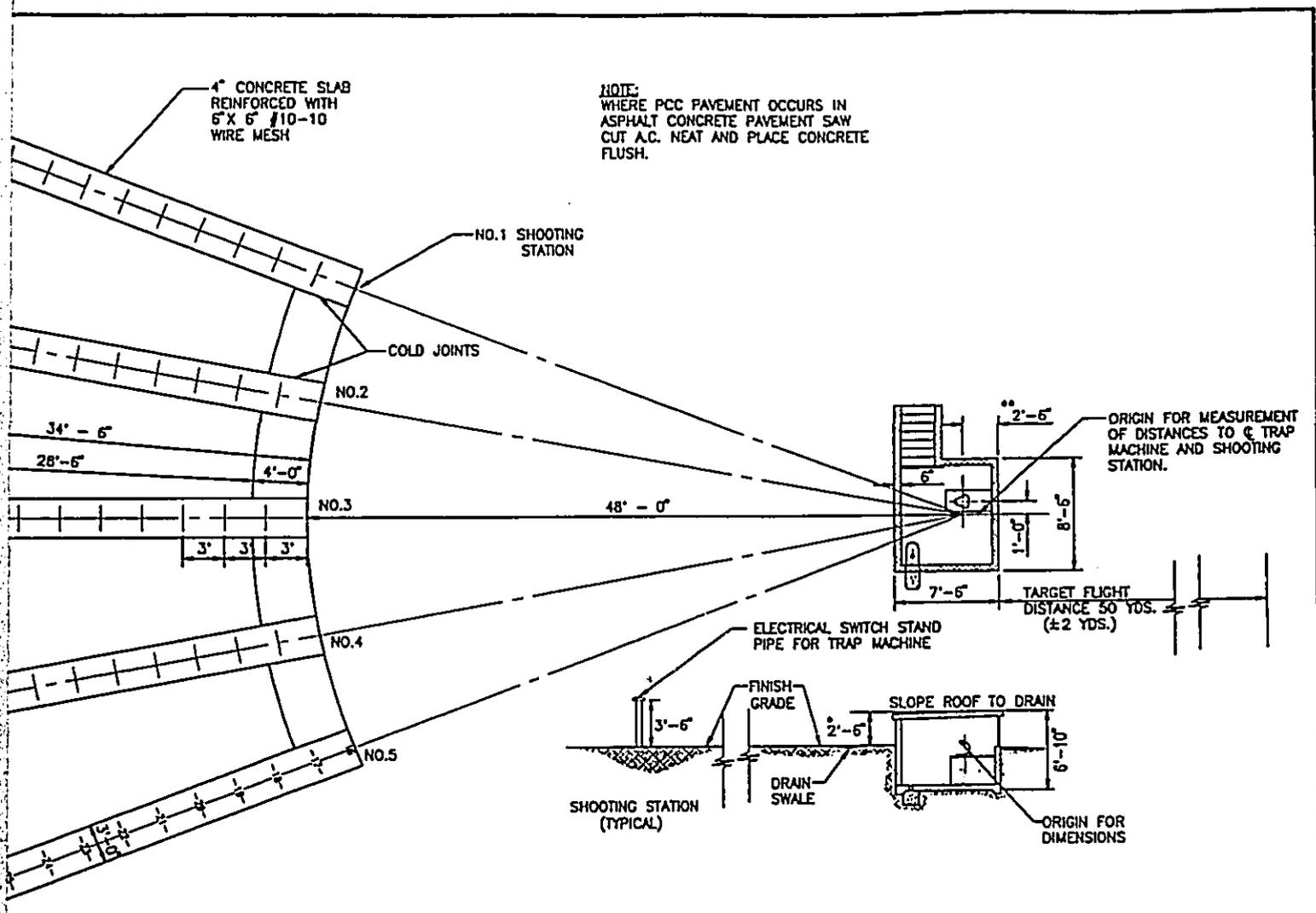
PROFILE  
RANGE  
20' HORIZ  
1' VERT



SECTION C - C  
AT PISTOL RANGE  
SCALE: 1/2" = 1' - 0"

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED
DEPARTMENT OF PARKS & RECREATION CITY & COUNTY OF HONOLULU FACILITIES DEVELOPMENT DIVISION <b>SAFETY IMPROVEMENTS TO KOKO HEAD RIFLE RANGE            AT KOKO HEAD REGIONAL PARK</b>				
<b>PISTOL RANGE WALL DETAILS</b>				
DESIGNED BY:			DRAWN BY:	
REVIEWED BY:			DATE:	
APPROVED:			DRAWING NO. <b>C-10</b>	
SHEET <b>11</b> OF _____ FILE NO. <b>59/139</b>				





NOTE:  
WHERE PCC PAVEMENT OCCURS IN  
ASPHALT CONCRETE PAVEMENT SAW  
CUT A.C. NEAT AND PLACE CONCRETE  
FLUSH.

4" CONCRETE SLAB  
REINFORCED WITH  
6" X 6" #10-10  
WIRE MESH

NO.1 SHOOTING  
STATION

COLD JOINTS

NO.2

34'-6"

28'-6"

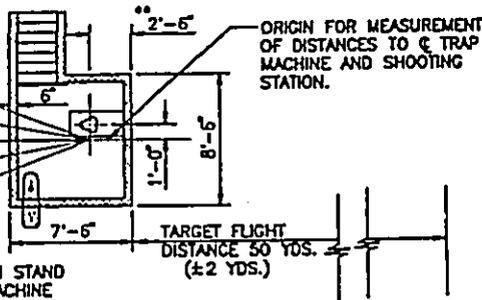
NO.3

48'-0"

3'

NO.4

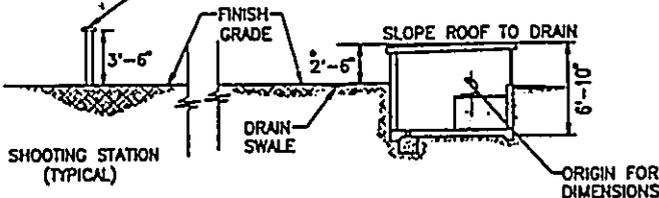
NO.5



ORIGIN FOR MEASUREMENT  
OF DISTANCES TO C TRAP  
MACHINE AND SHOOTING  
STATION.

TARGET FLIGHT  
DISTANCE 50 YDS.  
(±2 YDS.)

ELECTRICAL SWITCH STAND  
PIPE FOR TRAP MACHINE



SHOOTING STATION  
(TYPICAL)

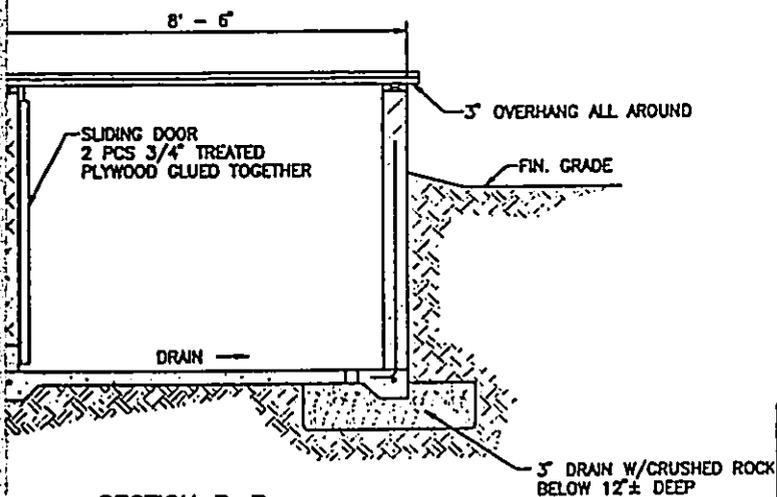
ORIGIN FOR  
DIMENSIONS

**A.T.A. DEFINITIVE TRAP FIELD**

SCALE : 1" = 60'

**NOTE:**

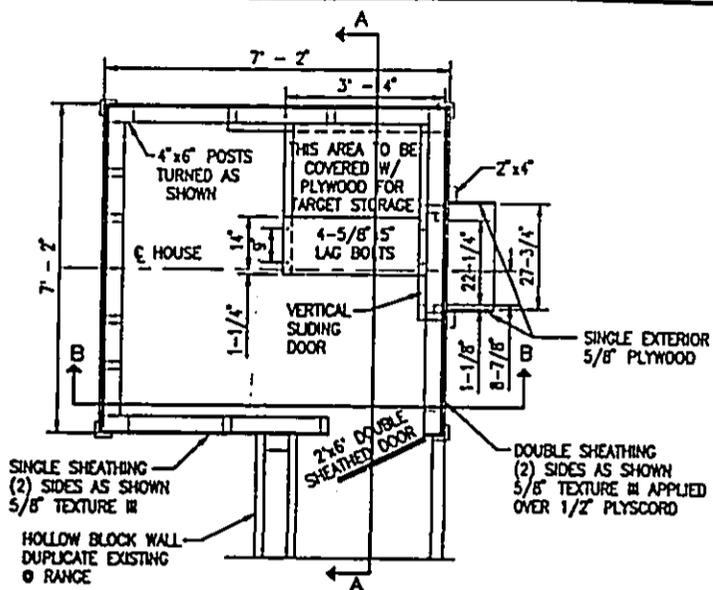
- 1. TO AGREE WITH A.T.A. RULES, TOP OF TRAP HOUSE MUST BE NOT LESS THAN 2'-2" NOR MORE THAN 2'-10" ABOVE LEVEL OF NO.3 SHOOTING STATION.
- 2. THIS DIMENSION VARIES ACCORDING TO TYPE OF TRAP USED. PLACED UNDERGROUND WIRING PRIOR TO POURING CONCRETE.



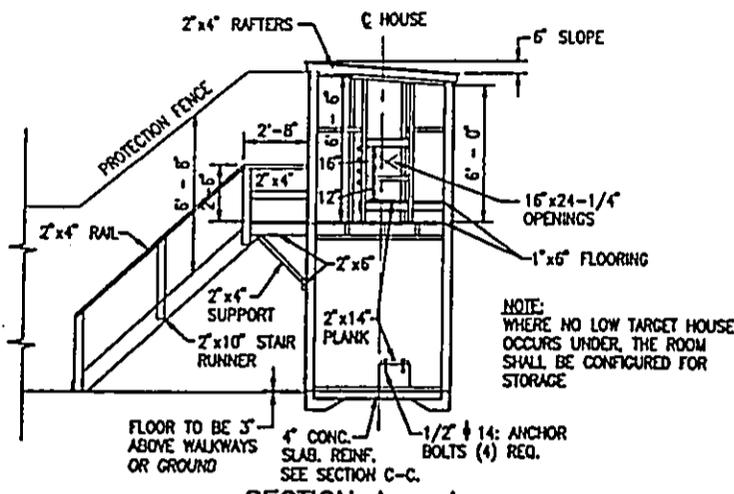
**SECTION B-B**  
**TRAP HOUSE ~ PITTED**  
SCALE : 1/2" = 1'-0"

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED
DEPARTMENT OF PARKS & RECREATION CITY & COUNTY OF HONOLULU FACILITIES DEVELOPMENT DIVISION <b>SAFETY IMPROVEMENTS TO KOKO HEAD RIFLE RANGE            AT KOKO HEAD REGIONAL PARK</b>				
<b>TRAP FIELD &amp; HOUSE DETAIL</b>				
DESIGNED BY:		DRAWN BY:		
REVIEWED BY:		DATE:		
APPROVED:				
			DRAWING NO.	C-11
SHEET 12 OF			FILE NO.	59/139

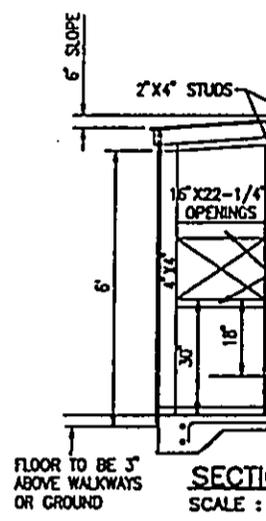
**DETAIL**



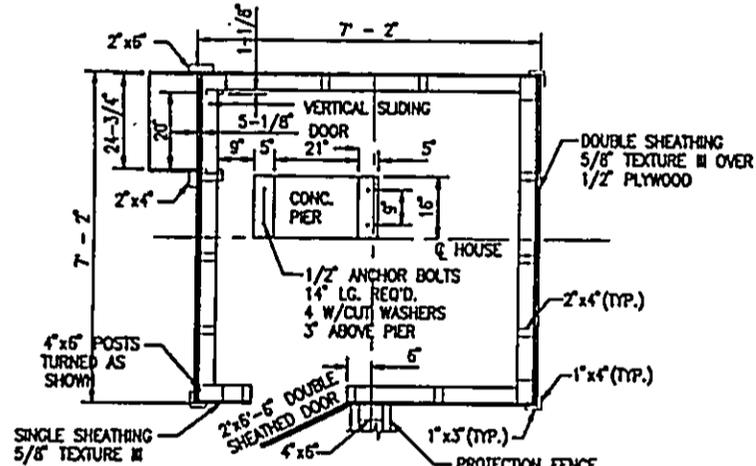
**HIGH HOUSE FLOOR PLAN**  
SCALE: 1/2" = 1' - 0"



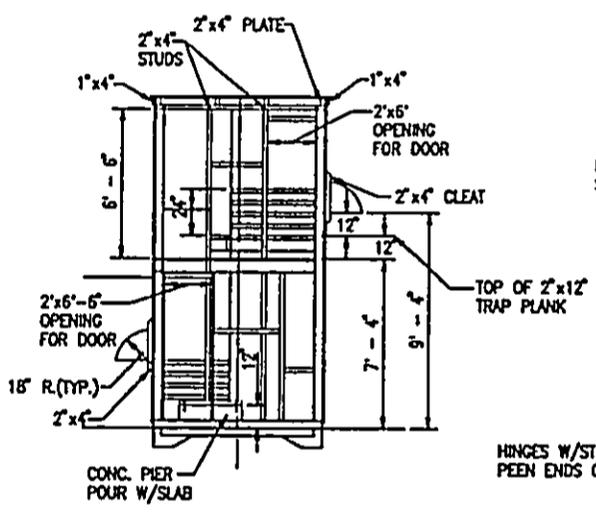
**SECTION A - A**  
SCALE: 1/4" = 1' - 0"



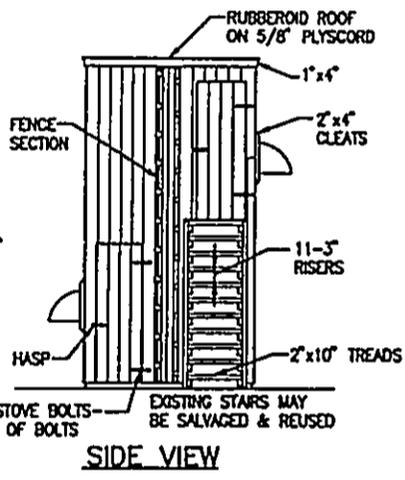
**SECTION B - B**  
SCALE: 1/4" = 1' - 0"



**LOW HOUSE FLOOR PLAN**  
SCALE: 1/2" = 1' - 0"

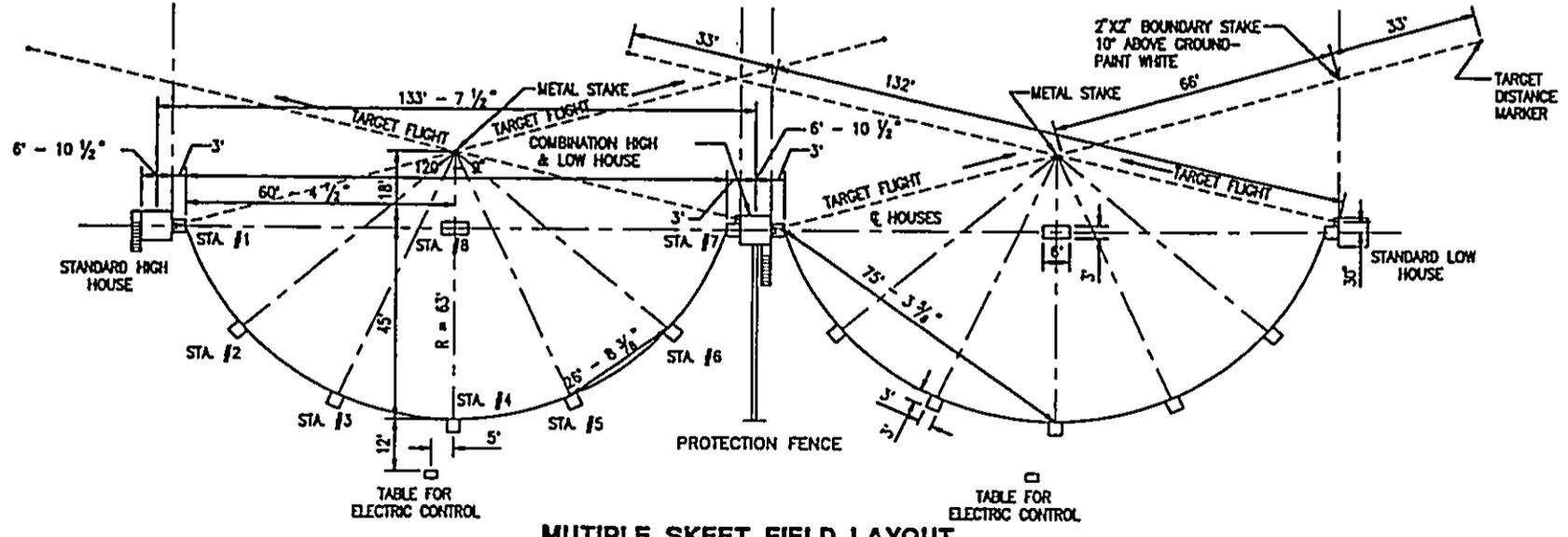


**SECTION B - B**  
SCALE: 1/4" = 1' - 0"



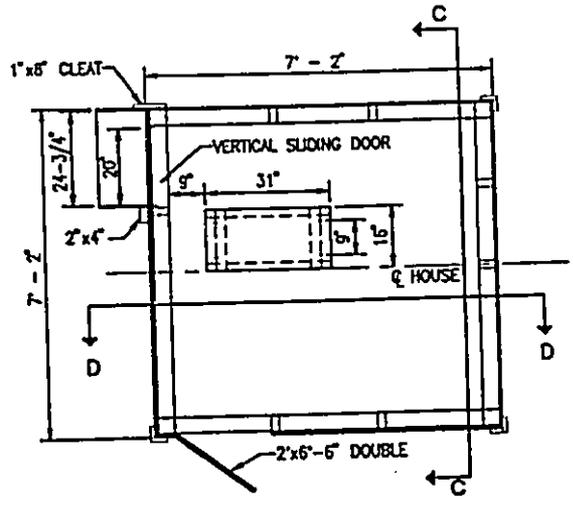
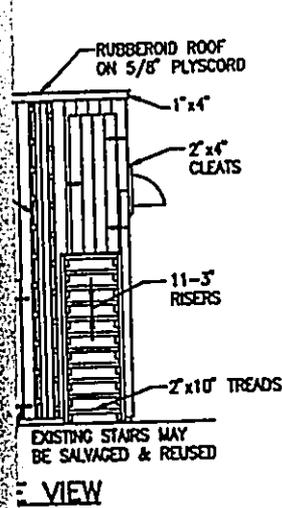
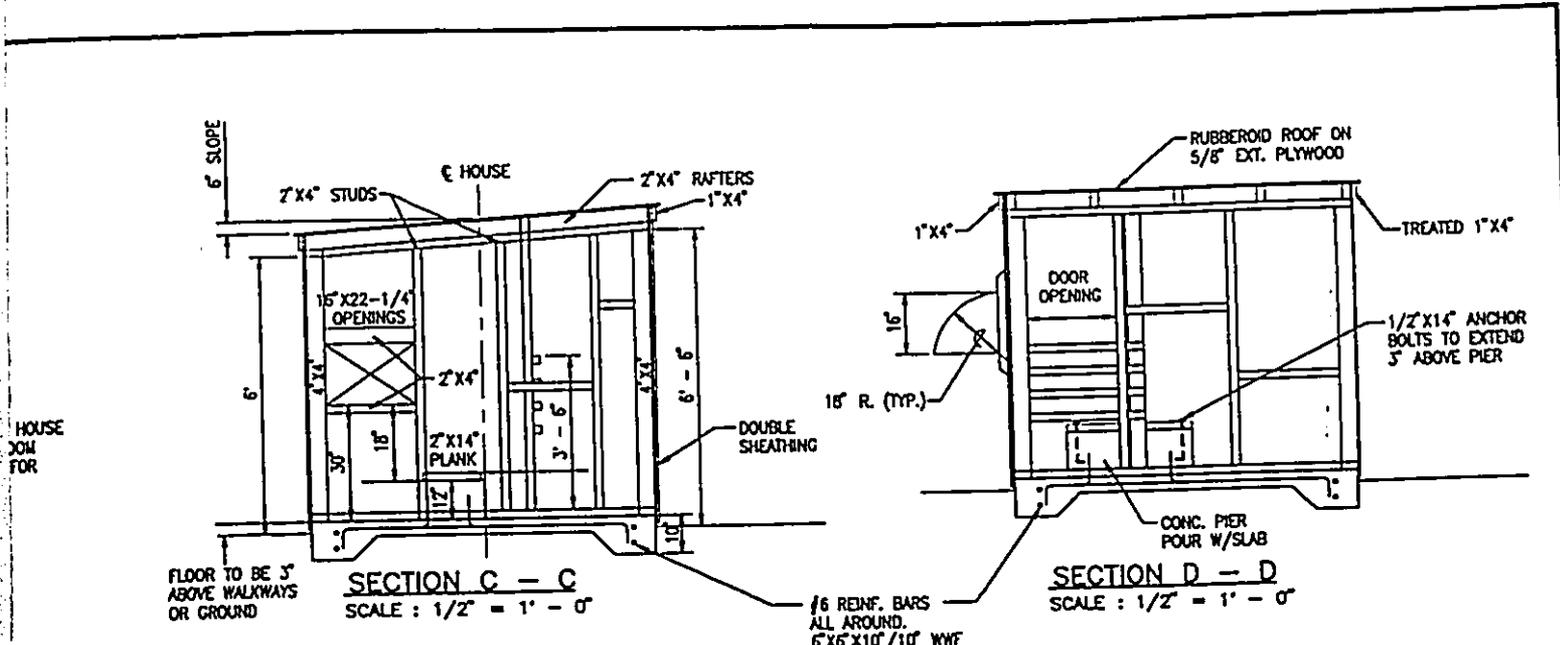
**SIDE VIEW**

**COMBINATION HI-LO SKEET HOUSE**



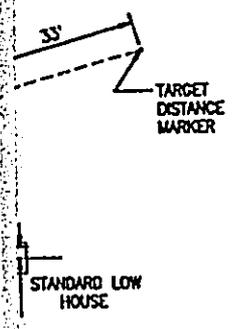
**MULTIPLE SKEET FIELD LAYOUT**  
SCALE: 1" = 20'

200 No. 91-38 Pictorial-DET-DWG Dia (K20) H(05)(1) Part-1 Date: 07/21/73



**LOW HOUSE FLOOR PLAN**  
SCALE: 1/2" = 1' - 0"  
**LOW SKEET HOUSE**

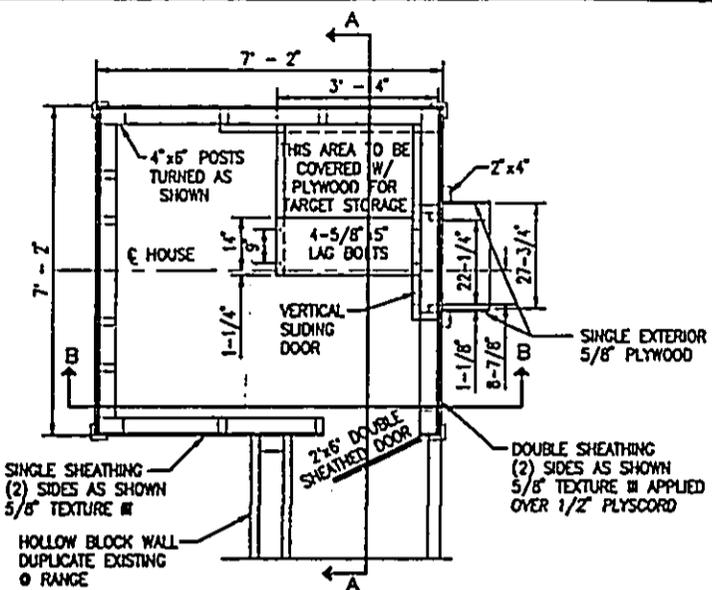
- NOTE:**
1. DRAWING IS FOR WOOD CONSTRUCTION. LOW HOUSE IS TO BE MADE OF HOLLOW BLOCK 6"x8"x16". USE APPLICABLE DIMENSIONS FROM THESE DRAWINGS.
  2. ALL WOOD TO BE TERMITE TREATED. WOOD TO BE PRIMED AND PAINTED ON EXTERIOR.
  3. HOLLOW BLOCK NEED NOT BE PAINTED.
  4. ALL HARDWARE TO BE GALVANIZED.



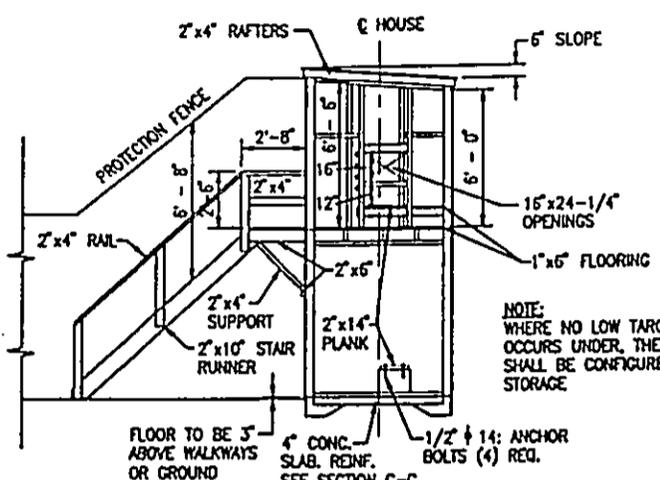
REVISION	DATE	DESCRIPTION	MADE BY	APPROVED
DEPARTMENT OF PARKS & RECREATION CITY & COUNTY OF HONOLULU FACILITIES DEVELOPMENT DIVISION <b>SAFETY IMPROVEMENTS TO KOKO HEAD RIFLE RANGE            AT KOKO HEAD REGIONAL PARK</b>				
<b>SKEET FIELD &amp; HOUSE DETAIL</b>				
DESIGNED BY:	DRAWN BY:		DATE:	
REVIEWED BY:	APPROVED:		DRAWING NO. C-12	
SHEET 13 OF FILE NO. 59/139				

# CORRECTION

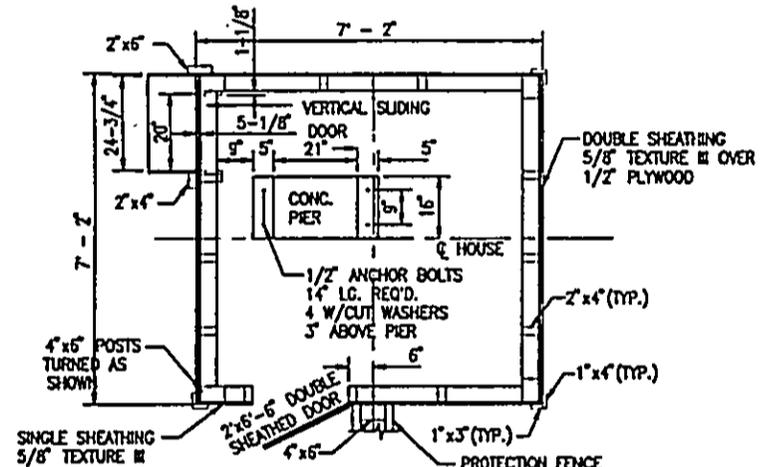
THE PRECEDING DOCUMENT(S) HAS  
BEEN REPHOTOGRAPHED TO ASSURE  
LEGIBILITY  
SEE FRAME(S)  
IMMEDIATELY FOLLOWING



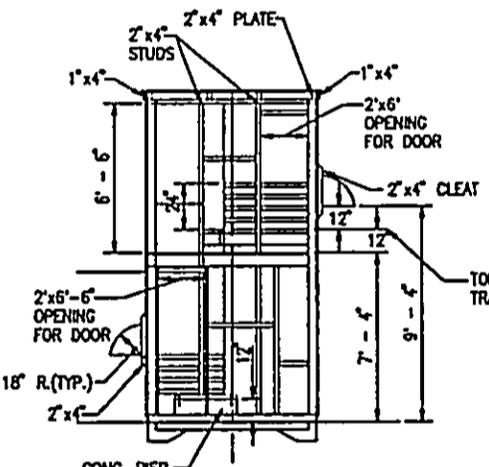
**HIGH HOUSE FLOOR PLAN**  
SCALE: 1/2" = 1' - 0"



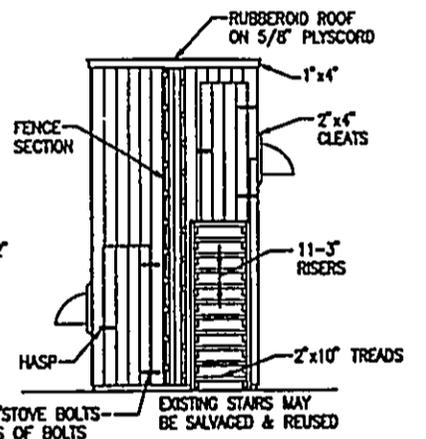
**SECTION A - A**  
SCALE: 1/4" = 1' - 0"



**LOW HOUSE FLOOR PLAN**  
SCALE: 1/2" = 1' - 0"

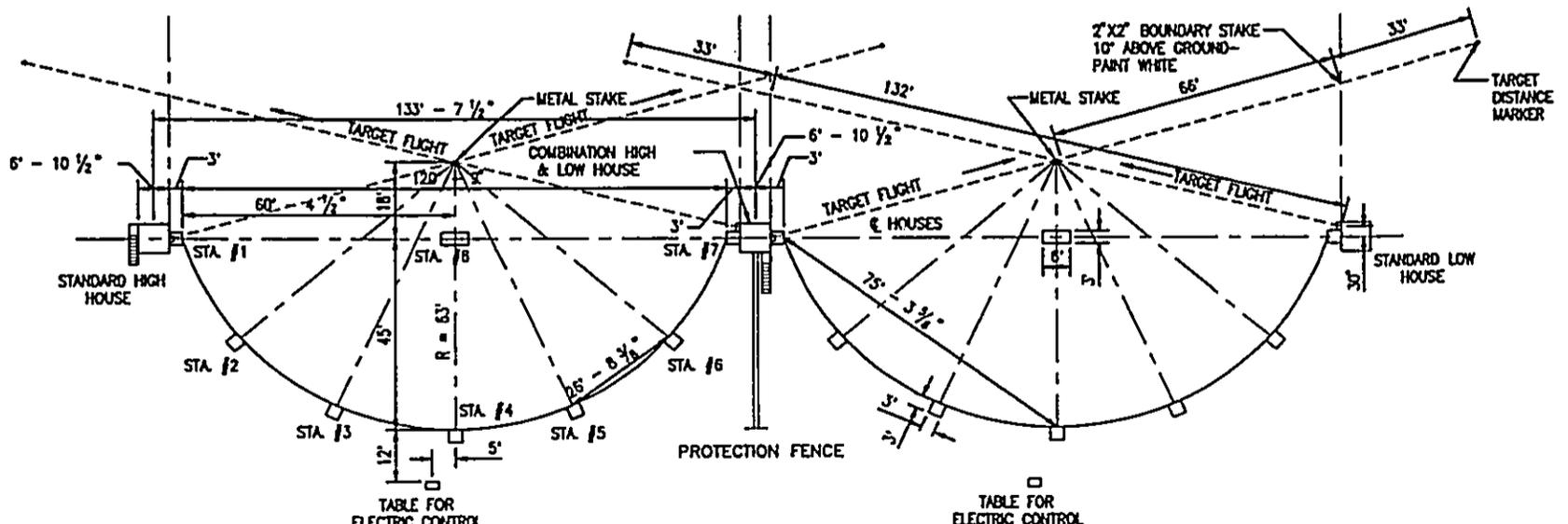


**SECTION B - B**  
SCALE: 1/4" = 1' - 0"



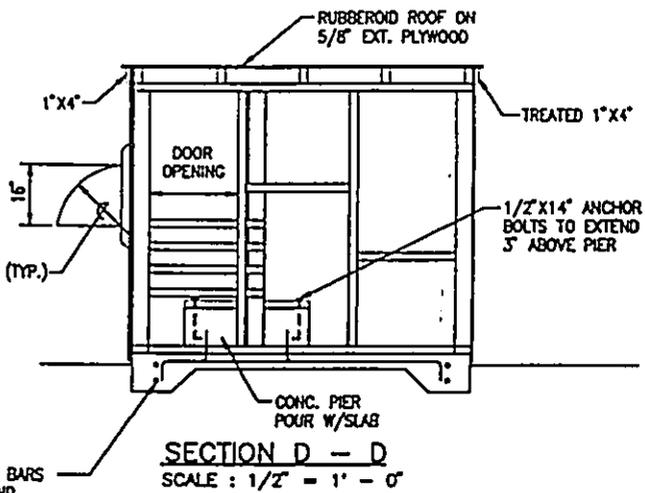
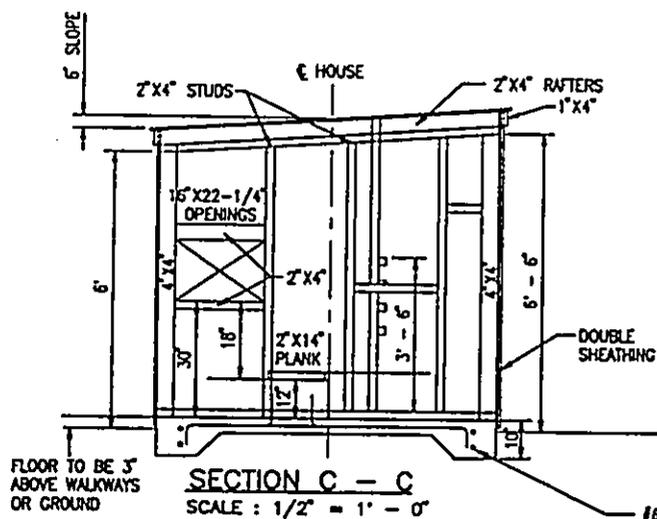
**SIDE VIEW**

**COMBINATION HI-LO SKEET HOUSE**



**MULTIPLE SKEET FIELD LAYOUT**  
SCALE: 1" = 20'

100 No. 81-38 Project-DET-ING Det-4000 (40051) Plan-1 Date: 07/21/72



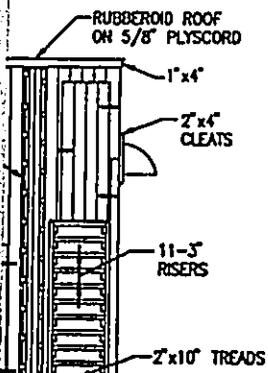
HOUSE  
DOM  
FOR

FLOOR TO BE 3\"/>

SECTION C - C  
SCALE: 1/2" = 1' - 0"

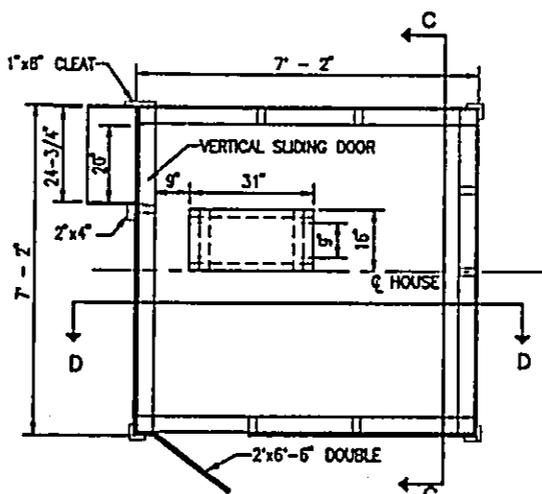
#6 REINF. BARS  
ALL AROUND,  
6'x6'x10'/10" WWF

SECTION D - D  
SCALE: 1/2" = 1' - 0"



EXISTING STAIRS MAY  
BE SALVAGED & REUSED

ELEVATION  
VIEW



LOW HOUSE FLOOR PLAN  
SCALE: 1/2" = 1' - 0"

LOW SKEET HOUSE

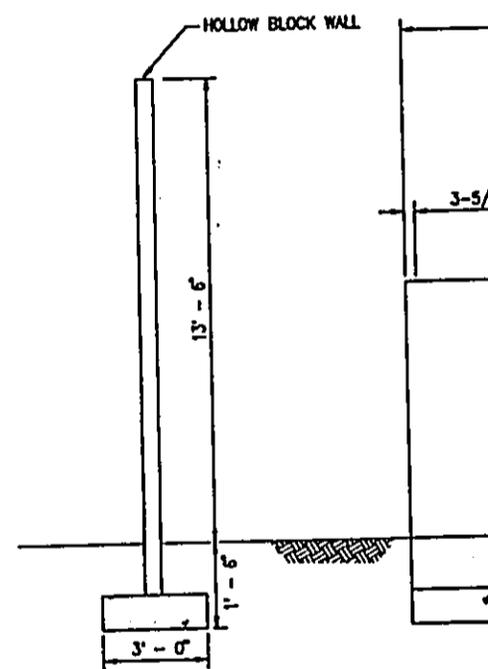
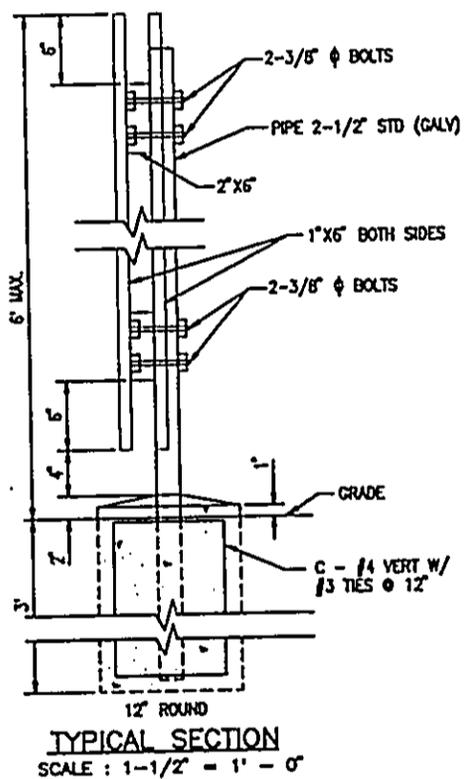
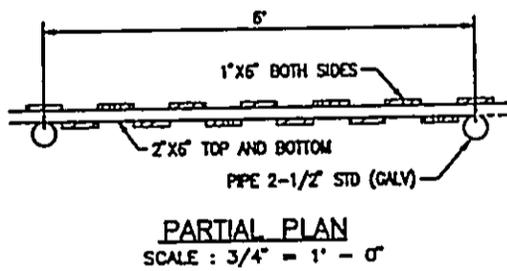
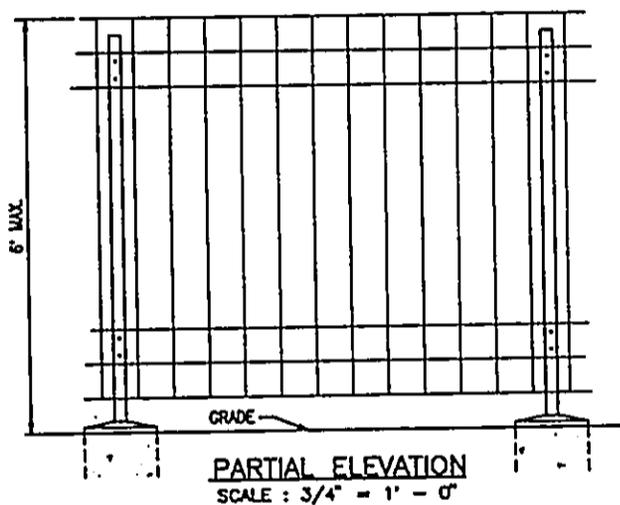
NOTE:

1. DRAWING IS FOR WOOD CONSTRUCTION. LOW HOUSE IS TO BE MADE OF HOLLOW BLOCK 6'x6'x16'. USE APPLICABLE DIMENSIONS FROM THESE DRAWINGS.
2. ALL WOOD TO BE TERMITE TREATED. WOOD TO BE PRIMED AND PAINTED ON EXTERIOR.
3. HOLLOW BLOCK NEED NOT BE PAINTED.
4. ALL HARDWARE TO BE GALVANIZED.

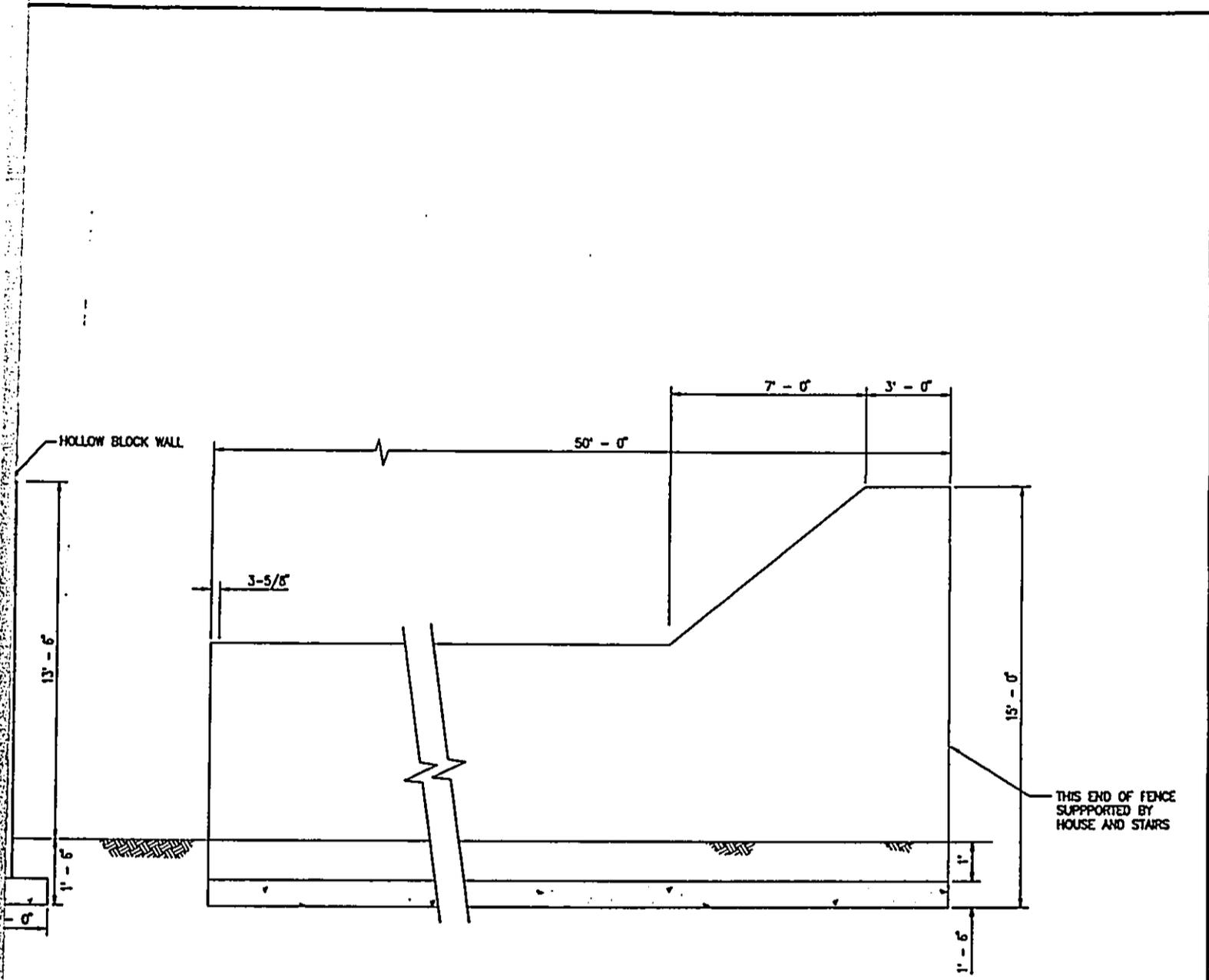


STANDARD LOW  
HOUSE

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED
DEPARTMENT OF PARKS & RECREATION CITY & COUNTY OF HONOLULU FACILITIES DEVELOPMENT DIVISION SAFETY IMPROVEMENTS TO KOKO HEAD RIFLE RANGE AT KOKO HEAD REGIONAL PARK  <b>SKEET FIELD &amp; HOUSE DETAIL</b>				
DESIGNED BY: _____		DRAWN BY: _____		
REVIEWED BY: _____		DATE: _____		
APPROVED: _____		DRAWING NO. <b>C-12</b>		
SHEET <b>13</b> OF _____		FILE NO. <b>59/139</b>		



**WOODEN SAFETY FENCE DETAIL  
AT AMERICAN TRAP RANGE**



**PROTECTION FENCE AT SKEET RANGE**  
 SCALE : 3/8" = 1' - 0"

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED
DEPARTMENT OF PARKS & RECREATION CITY & COUNTY OF HONOLULU FACILITIES DEVELOPMENT DIVISION <b>SAFETY IMPROVEMENTS TO KOKO HEAD RIFLE RANGE            AT KOKO HEAD REGIONAL PARK</b>				
<b>SAFETY FENCE DETAILS</b>				
DESIGNED BY: _____		DRAWN BY: _____		
REVIEWED BY: _____		DATE: _____		
APPROVED: _____		DRAWING NO. <b>C-13</b>		
SHEET, FACILITIES DEVELOPMENT		DRAWING NO. <b>C-13</b>		
SHEET <b>14</b> OF _____		FILE NO. <b>59/139</b>		