

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
Bid Receiving Public Works & Government
Services Canada/Réception des soumissions
Travaux publics et Services gouvernementaux
Canada
1713 Bedford Row
Halifax, N.S./Halifax, (N.E.)
B3J 1T3
Halifax
Bid Fax: (902) 496-5016

INVITATION TO TENDER APPEL D'OFFRES

**Tender To: Public Works and Government Services
Canada**

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

Soumission aux: Travaux Publics et Services Gouvernementaux Canada

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici et sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Vendor/Firm Name and Address
Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Atlantic Region Acquisitions/Région de l'Atlantique
Acquisitions
1713 Bedford Row
Halifax, N.S./Halifax, (N.E.)
B3J 3C9
Halifax
Nova Scot

Title - Sujet Citadel Mast Replacement	
Solicitation No. - N° de l'invitation EB144-161117/A	Date 2015-10-02
Client Reference No. - N° de référence du client EB144-16-1117	GETS Ref. No. - N° de réf. de SEAG PW-\$PWA-310-5287
File No. - N° de dossier PWA-5-74089 (310)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2015-10-22	
Time Zone Fuseau horaire Atlantic Daylight Saving Time ADT	
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Stevenson, Jacquelyn	Buyer Id - Id de l'acheteur pwa310
Telephone No. - N° de téléphone (902) 403-3520 ()	FAX No. - N° de FAX (902) 496-5016
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: DEPARTMENT OF PUBLIC WORKS AND GOVERNMENT SERVICES CANADA 2ND FL. 1713 BEDFORD ROW HALIFAX NOVA SCOTIA B3J3C9 Canada	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée See Herein	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

Solicitation No. - N° de l'invitation

EB144-161117/A

Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

pwa310

Client Ref. No. - N° de réf. du client

EB144-16-1117

File No. - N° du dossier

PWA-5-74089

CCC No./N° CCC - FMS No/ N° VME

THIS BLANK PAGE HAS BEEN INSERTED INTENTIONALLY

INVITATION TO TENDER

TABLE OF CONTENTS

SPECIAL INSTRUCTIONS TO BIDDERS (SI)

SI01	Integrity Provisions – Declaration of Convicted Offences
SI02	Bid Documents
SI03	Enquiries during the Solicitation Period
SI04	Site Visit
SI05	Revision of Bid
SI06	Bid Results
SI07	Insufficient Funding
SI08	Bid Validity Period
SI09	Construction Documents
SI10	Security Related Requirements
SI11	Public Works and Government Services Canada, Apprentice Procurement Initiative
SI12	Web Sites

R2710T GENERAL INSTRUCTIONS - CONSTRUCTION SERVICES - BID SECURITY REQUIREMENTS (GI) (2015-07-03)

The following GI's are included by reference and are available at the following Web Site <https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/5/R>

GI01	Integrity Provisions - Bid
GI02	Completion of Bid
GI03	Identity or Legal Capacity of the Bidder
GI04	Applicable Taxes
GI05	Capital Development and Redevelopment Charges
GI06	Registry and Pre-qualification of Floating Plant
GI07	Listing of Subcontractors and Suppliers
GI08	Bid Security Requirements
GI09	Submission of Bid
GI10	Revision of Bid
GI11	Rejection of Bid
GI12	Bid Costs
GI13	Procurement Business Number
GI14	Compliance With Applicable Laws
GI15	Approval of Alternative Materials
GI16	Performance Evaluation
GI17	Conflict of Interest-Unfair Advantage

SUPPLEMENTARY CONDITIONS (SC)

SC01	Limitation of Liability
SC02	Insurance Terms

CONTRACT DOCUMENTS (CD)

BID AND ACCEPTANCE FORM (BA)

BA01	Identification
BA02	Business Name and Address of Bidder
BA03	The Offer
BA04	Bid Validity Period
BA05	Acceptance and Contract
BA06	Construction Time
BA07	Bid Security
BA08	Signature

APPENDIX 1 - INTEGRITY PROVISIONS – LIST OF NAMES

APPENDIX 2 - VOLUNTARY CERTIFICATION TO SUPPORT THE USE OF APPRENTICES

APPENDIX 3 – DEPARTMENTAL REPRESENTATIVE’S AUTHORITY

ANNEX A - CERTIFICATE OF INSURANCE

ANNEX B - VOLUNTARY REPORTS FOR APPRENTICES EMPLOYED DURING THE CONTRACT

SPECIAL INSTRUCTIONS TO BIDDERS (SI)

SI01 INTEGRITY PROVISIONS – DECLARATION OF CONVICTED OFFENCES

As applicable, pursuant to GI01 of the Declaration of Convicted Offences, paragraph 10 (copied below) of the General Instructions **R2710T**, the Bidder must provide with its bid, a completed [Declaration Form](#), to be given further consideration in the procurement process.

Declaration of Convicted Offences

Where a Bidder or its Affiliate is unable to certify that it has not been convicted of any of the offences referenced under the Canadian Offences Resulting in Legal Incapacity, the Canadian Offences and the Foreign Offences subsections, the Bidder must provide with its bid the completed [Declaration Form](#), to be given further consideration in the procurement process.

SI02 BID DOCUMENTS

1. The following are the bid documents:
 - a. Invitation to Tender - Page 1;
 - b. Special Instructions to Bidders;
 - c. General Instructions - Construction Services - Bid Security Requirements R2710T (2015-07-03)
 - d. Clauses & Conditions identified in "Contract Documents";
 - e. Drawings and Specifications;
 - f. Bid and Acceptance Form and related Appendix(s); and
 - g. Any amendment issued prior to solicitation closing.

Submission of a bid constitutes acknowledgement that the Bidder has read and agrees to be bound by these documents.

2. General Instructions - Construction Services - Bid Security Requirements R2710T is incorporated by reference and is set out in the Standard Acquisition Clauses and Conditions (SACC) Manual, issued by Public Works and Government Services Canada (PWGSC). The SACC Manual is available on the PWGSC Web site: <https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/5/R>

SI03 ENQUIRIES DURING THE SOLICITATION PERIOD

1. Enquiries regarding this bid must be submitted in writing to the Contracting Officer named on the Invitation to Tender - Page 1 as early as possible within the solicitation period. Except for the approval of alternative materials as described in GI15 of R2710T, enquiries should be received no later than **five (5) calendar** days prior to the date set for solicitation closing to allow sufficient time to provide a response. Enquiries received after that time may not result in an answer being provided.
2. To ensure consistency and quality of the information provided to Bidders, the Contracting Officer shall examine the content of the enquiry and shall decide whether or not to issue an amendment.
3. All enquiries and other communications related to this bid sent throughout the solicitation period are to be directed **ONLY** to the Contracting Officer named on the Invitation to Tender - Page 1. Failure to comply with this requirement may result in the bid being declared non-responsive.

SI04 SITE VISIT

There will be a site visit on **October 8th, 2015 at 1400hrs** Interested bidders are to meet at Citadel Hill – Main Gate Entrance.

SI05 REVISION OF BID

A bid may be revised by letter or facsimile in accordance with **GI10 of R2710T**. The facsimile number for receipt of revisions is **902.496.5016**

SI06 BID RESULTS

1. A public bid opening will be held in the office designated on the Front Page "Invitation to Tender" for the receipt of bids shortly after the time set for solicitation closing.
2. Following solicitation closing, bid results may be obtained by calling **902.496.5001**

SI07 INSUFFICIENT FUNDING

In the event that the lowest compliant bid exceeds the amount of funding allocated for the Work, Canada in its sole discretion may

- a. cancel the solicitation; or
- b. obtain additional funding and award the Contract to the Bidder submitting the lowest compliant bid; and/or
- c. negotiate a reduction in the bid price and/or scope of work of not more than 15% with the Bidder submitting the lowest compliant bid. Should an agreement satisfactory to Canada not be reached, Canada shall exercise option (a) or (b).

SI08 BID VALIDITY PERIOD

1. Canada reserves the right to seek an extension to the bid validity period prescribed in BA04 of the Bid and Acceptance Form. Upon notification in writing from Canada, Bidders shall have the option to either accept or reject the proposed extension.
2. If the extension referred to in paragraph 1. of SI08 is accepted, in writing, by all those who submitted bids, then Canada shall continue immediately with the evaluation of the bids and its approvals processes.
3. If the extension referred to in paragraph 1. of SI08 is not accepted in writing by all those who submitted bids then Canada shall, at its sole discretion, either
 - a. continue to evaluate the bids of those who have accepted the proposed extension and seek the necessary approvals; or
 - b. cancel the invitation to tender.
4. The provisions expressed herein do not in any manner limit Canada's rights in law or under GI11 of R2710T

SI09 CONSTRUCTION DOCUMENTS

The successful Contractor will be provided with **one** paper copy of the sealed and signed drawings, the specifications and the amendments upon acceptance of the offer. Obtaining more copies shall be the responsibility of the Contractor including costs.

SI10 SECURITY RELATED REQUIREMENTS

1. **At bid closing, the Bidder must hold a valid** Security Clearance as indicated in section SC01 of the Supplementary Conditions. Failure to comply with this requirement will render the Bid non-compliant and no further consideration will be given to the Bid.

2. The Successful Bidder's personnel, as well as any subcontractor and its personnel, who are required to perform any part of the Work pursuant to the subsequent contract must meet the mandatory security requirement as indicated in section SC01 of the Supplementary Conditions. **Individuals who do not have the required level of security will not be allowed on site.** It is the responsibility of the successful bidder to ensure that the security requirements are met throughout the performance of the contract. Canada will not be held liable or accountable for any delays or additional costs associated with the successful bidder's non-compliance with the mandatory security requirement.
3. For additional information on security requirements, bidders should consult the "Security Requirements for PWGSC Bid Solicitations - Instructions for Bidders" on the Standard Procurement Documents Web site [Industrial Security Program](#)

SI11 PUBLIC WORKS AND GOVERNMENT SERVICES CANADA APPRENTICE PROCUREMENT INITIATIVE

1. To encourage employers to participate in apprenticeship training, Contractors bidding on construction and maintenance contracts by Public Works and Government Services Canada (PWGSC) are being asked to sign a voluntary certification, signaling their commitment to hire and train apprentices.
2. Canada is facing skills shortages across various sectors and regions, especially in the skilled trades. Equipping Canadians with skills and training is a shared responsibility. In Economic Action Plan (EAP) 2013, the Government of Canada made a commitment to support the use of apprentices in federal construction and maintenance contracts. Contractors have an important role in supporting apprentices through hiring and training and are encouraged to certify that they are providing opportunities to apprentices as part of doing business with the Government of Canada.
3. Through the Economic Action Plan 2013 and support for training programs, the Government of Canada is encouraging apprenticeships and careers in the skilled trades. In addition, the government offers a tax credit to employers to encourage them to hire apprentices. Information on this tax measure administered by the Canada Revenue Agency can be found at: www.cra-arc.gc.ca. Employers are also encouraged to find out what additional information and supports are available from their respective provincial or territorial jurisdiction.
4. Signed certifications (Appendix 4) will be used to better understand contractor use of apprentices on Government of Canada maintenance and construction contracts and may inform future policy and program development.
5. The Contractor hereby certifies the following:

In order to help meet demand for skilled trades people, the Contractor agrees to use, and require its subcontractors to use, reasonable commercial efforts to hire and train registered apprentices, to strive to fully utilize allowable apprenticeship ratios * and to respect any hiring requirements prescribed by provincial or territorial statutes

The Contractor hereby consents to this information being collected and held by PWGSC, and Employment and Social Development Canada to support work to gather data on the hiring and training of apprentices in federal construction and maintenance contracts.

To support this initiative, a voluntary certification signaling the Contractor's commitment to hire and train apprentices is available at Appendix 4.

If you accept fill out and sign Appendix 4

** The journey person-apprentice ratio is defined as the number of qualified/certified journeypersons that an employer must employ in a designated trade or occupation in order to be eligible to register an apprentice as determined by provincial/territorial (P/T) legislation, regulation, policy directive or by law issued by the responsible authority or agency.*

SI12 WEB SITES

The connection to some of the Web sites in the solicitation documents is established by the use of hyperlinks. The following is a list of the addresses of the Web sites:

Treasury Board Appendix L, Acceptable Bonding Companies

<http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=14494§ion=text#appl>

Buy and Sell <https://www.achatsetventes-buyandsell.gc.ca>

Canadian economic sanctions <http://www.international.gc.ca/sanctions/index.aspx?lang=eng>

Contractor Performance Evaluation Report (Form PWGSC-TPSGC 2913)

<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/2913.pdf>

Bid Bond (form PWGSC-TPSGC 504) <http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/504.pdf>

Performance Bond (form PWGSC-TPSGC 505) <http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/505.pdf>

Labour and Material Payment Bond (form PWGSC-TPSGC 506)

<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/506.pdf>

Standard Acquisition Clauses and Conditions (SACC) Manual

<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/5/R>

PWGSC, Industrial Security Services <http://ssi-iss.tpsgc-pwgsc.gc.ca/index-eng.html>

PWGSC, Code of Conduct and Certifications

<http://www.tpsgc-pwgsc.gc.ca/app-acq/cndt-cndct/contexte-context-eng.html>

Construction and Consultant Services Contract Administration Forms Real Property Contracting

<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/formulaires-forms-eng.html>

Declaration Form

<http://www.tpsgc-pwgsc.gc.ca/ci-if/formulaire-form-eng.html>

SUPPLEMENTARY CONDITIONS (SC)

SC02 LIMITATION OF LIABILITY

GC1.6 of R2810D is deleted and replaced with the following:

GC1.6 Indemnification by the Contractor

1. The Contractor shall indemnify and save Canada harmless from and against all claims, demands, losses, costs, damages, actions, suits, or proceedings whether in respect to losses suffered by Canada or in respect of claims by any third party, brought or prosecuted and in any manner based upon, arising out of, related to, occasioned by, or attributable to the activities of the Contractor in performing the Work, provided such claims are caused by the negligent or deliberate acts or omissions of the Contractor, or those for whom it is responsible at law.
2. The Contractor's obligation to indemnify Canada for losses related to first party liability shall be limited to:
 - a. In respect to each loss for which insurance is to be provided pursuant to the insurance requirements of the Contract, the Commercial General Liability insurance limit for one occurrence as referred to in the insurance requirements of the Contract .
 - b. In respect to losses for which insurance is not required to be provided in accordance with the insurance requirements of the Contract, the greater of the Contract Amount or \$5,000,000, but in no event shall the sum be greater than \$20,000,000.

The limitation of this obligation shall be exclusive of interest and all legal costs and shall not apply to any infringement of intellectual property rights or any breach of warranty obligations.

3. The Contractor's obligation to indemnify Canada for losses related to third party liability shall have no limitation and shall include the complete costs of defending any legal action by a third party. If requested by Canada, the Contractor shall defend Canada against any third party claims.
4. The Contractor shall pay all royalties and patent fees required for the performance of the Contract and, at the Contractor's expense, shall defend all claims, actions or proceedings against Canada charging or claiming that the Work or any part thereof provided or furnished by the Contractor to Canada infringes any patent, industrial design, copyright trademark, trade secret or other proprietary right enforceable in Canada.
5. Notice in writing of a claim shall be given within a reasonable time after the facts, upon which such claim is based, became known.

SC03 INSURANCE TERMS

1) Insurance Contracts

- (a) The Contractor must, at the Contractor's expense, obtain and maintain insurance contracts in accordance with the requirements of the Certificate of Insurance. Coverage must be placed with an Insurer licensed to carry out business in Canada.
- (b) Compliance with the insurance requirements does not release the Contractor from or reduce its liability under the Contract. The Contractor is responsible for deciding if additional insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any additional insurance coverage is at the Contractor's expense, and for its own benefit and protection.

2) Period of Insurance

- (a) The policies required in the Certificate of Insurance must be in force from the date of contract award and be maintained throughout the duration of the Contract.

- (b) The Contractor must be responsible to provide and maintain coverage for Products/Completed Operations hazards on its Commercial General Liability insurance policy, for a period of six (6) years beyond the date of the Certificate of Substantial Performance.

3) Proof of Insurance

- (a) Before commencement of the Work, and no later than thirty (30) days after acceptance of its bid, the Contractor must deposit with Canada a Certificate of Insurance on the form attached herein.
- (b) Upon request by Canada, the Contractor must provide originals or certified true copies of all contracts of insurance maintained by the Contractor pursuant to the Certificate of Insurance.

4) Insurance Proceeds

In the event of a claim, the Contractor must, without delay, do such things and execute such documents as are necessary to effect payment of the proceeds.

5) Deductible

The payment of monies up to the deductible amount made in satisfaction of a claim must be borne by the Contractor.

CONTRACT DOCUMENTS (CD)

1. The following are the contract documents:
 - a. Contract Page when signed by Canada;
 - b. Duly completed Bid and Acceptance Form and any Appendices attached thereto;
 - c. Drawings and Specifications;
 - d. General Conditions and clauses

GC1	General Provisions – Construction Services	R2810D	(2015-07-09);
GC2	Administration of the Contract	R2820D	(2015-02-25);
GC3	Execution and Control of the Work	R2830D	(2015-02-25);
GC4	Protective Measures	R2840D	(2008-05-12);
GC5	Terms of Payment	R2850D	(2015-02-25);
GC6	Delays and Changes in the Work	R2860D	(2013-04-25);
GC7	Default, Suspension or Termination of Contract	R2870D	(2008-05-12);
GC8	Dispute Resolution	R2880D	(2015-04-01);
GC9	Contract Security	R2890D	(2014-06-26);
GC10	Insurance	R2900D	(2008-05-12);
	Allowable Costs for Contract Changes Under GC6.4.1	R2950D	(2015-02-25);
	Supplementary Conditions		
 - d. Any amendment issued or any allowable bid revision received before the date and time set for solicitation closing;
 - f. Any amendment incorporated by mutual agreement between Canada and the Contractor before acceptance of the bid; and
 - g. Any amendment or variation of the contract documents that is made in accordance with the General Conditions.
2. The documents identified by title, number and date above are incorporated by reference and are set out in the Standard Acquisition Clauses and Conditions (SACC) Manual, issued by Public Works and Government Services Canada (PWGSC). The SACC Manual is available on the PWGSC Web site:
<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>
3. The language of the contract documents is the language of the Bid and Acceptance Form submitted.

BID AND ACCEPTANCE FORM (BA)

BA01 IDENTIFICATION

Commercial Signal Mast Replacement – Citadel Hill, Halifax, NS

BA02 BUSINESS NAME AND ADDRESS OF BIDDER

Name: _____

Address: _____

Telephone: _____ Fax: _____ PBN: _____

BA03 THE OFFER

The Bidder offers to Canada to perform and complete the Work for the above named project in accordance with the Bid Documents for the Total Bid Amount of

\$ _____ excluding applicable tax(es).
(amount in numbers)

BA04 BID VALIDITY PERIOD

The bid shall not be withdrawn for a period of **(thirty) [30] days** following the date of solicitation closing.

BA05 ACCEPTANCE AND CONTRACT

Upon acceptance of the Contractor's offer by Canada, a binding Contract shall be formed between Canada and the Contractor. The documents forming the Contract shall be the contract documents identified in Contract Documents (CD).

BA06 CONSTRUCTION TIME

The Contractor shall perform and complete the Work within **twelve (12)** weeks from the date of notification of acceptance of the offer.

BA07 BID SECURITY

The Bidder is enclosing bid security with its bid in accordance with GI08 - Bid Security Requirements of R2710T - General Instructions - Construction Services - Bid Security Requirements.

BA08 SIGNATURE

Name and title of person authorized to sign on behalf of Bidder (Type or print)

Signature

Date

LUMP SUM

The Lump Sum Amount designates Work to which a Lump Sum Arrangement applies.

- (a) Work included in the Lump Sum Amount represents all work not included in the unit price table.

LUMP SUM AMOUNT (LSA) Excluding applicable tax(s)

UNIT PRICE TABLE

The Unit Price Table designates Work to which a Unit Price Arrangement applies.

- (a) Work included in each item is as described in the referenced specification section.
(b) The Price per Unit shall not include any amounts for Work that is not included in that unit price Item.

	Specification Reference	Class of Labour, Plant or Material	Unit of Measurement	Estimated Quantity (EQ)	Price per Unit applicable tax(s) extra (PU)	Extended amount (EQ x PU) applicable tax(s) extra
TOTAL EXTENDED AMOUNT (TEA) Excluding applicable tax(s)						

TOTAL BID AMOUNT (LSA +TEA) Excluding applicable tax(s)

APPENDIX 2 - INTEGRITY PROVISIONS – LIST OF NAMES

If the required list of names has not been received by the time the evaluation of bids is completed, Canada will inform the Bidder of a time frame within which to provide the information. Failure to provide the names within the time frame specified will render the bid non-responsive. Providing the required names is a mandatory requirement for contract award.

Bidders who are incorporated, including those bidding as a joint venture, must provide a complete list of names of all individuals who are currently directors of the Bidder.

Bidders bidding as sole proprietorship, as well as those bidding as a joint venture, must provide the name of the owner(s).

Bidders bidding as societies, firms or partnerships do not need to provide lists of names.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

APPENDIX 3 - VOLUNTARY CERTIFICATION TO SUPPORT THE USE OF APPRENTICES

Note; The contractor will be asked to fill out a report every six months or at project completion as per sample "Voluntary Reports for Apprentices Employed during the Contract" provided at Annex C

Name: _____

Signature: _____

Company Name: _____

Company Legal Name: _____

Solicitation Number: _____

Number of company employees: _____

Number of apprentices planned to be working on this contract: _____

Trades of those apprentices:

**APPENDIX 5 – DEPARTMENTAL REPRESENTATIVE’S AUTHORITY
TO BE PROVIDED AT CONTRACT AWARD.**

Contracting Authority is :

Name : JACQUELYN STEVENSON

Title : SUPPLY OFFICER

Department DEPARTMENT OF PUBLIC WORKS AND GOVERNMENT SERVICES

Division : ACQUISITIONS

Telephone : 902.403.3520

e-mail :jacquelyn.stevenson@pwgsc-tpsgc.gc.ca

Technical Authority is :

Name : _____

Title : _____

Department : _____

Division : _____

Telephone : ____ - ____ - _____

e-mail : _____

ANNEX A - CERTIFICATE OF INSURANCE (Not required at solicitation closing)

ANNEX C - VOLUNTARY REPORT FOR APPRENTICES EMPLOYED DURING THE CONTRACT
(Sample)

This report is not required at bid deposit)

The Contractor should compile and maintain records on the number of apprentices and their trade that were hired to work on the contract.

The Contractor should provide this data in accordance with the format below. If no apprentices were hired during the contract period, the Contractor should still provide a "nil" report.

The data should be submitted six months after the Contract award or at the end of the Contract, whichever comes first to the Contracting Authority.

Number of apprentices hired	Trade

(Add rows as needed)



Travaux publics et
Services gouvernementaux
Canada

Public Works and
Government Services
Canada

CERTIFICATE OF INSURANCE

Page 1 of 2

Description and Location of Work SIGNAL MAST REPLACEMENT – CITADEL HILL, HALIFAX, NOVA SCOTIA	Contract No. EB144-161117
	Project No. R.077940.001

Name of Insurer, Broker or Agent	Address (No., Street)	City	Province	Postal Code
Name of Insured (Contractor)	Address (No., Street)	City	Province	Postal Code
Additional Insured Her Majesty the Queen in Right of Canada as represented by the Minister of Public Works and Government Services				

Type of Insurance	Insurer Name and Policy Number	Inception Date D / M / Y	Expiry Date D / M / Y	Limits of Liability		
				Per Occurrence	Annual General Aggregate	Completed Operations Aggregate
Commercial General Liability Umbrella/Excess Liability				\$	\$	\$
				\$	\$	\$

I certify that the above policies were issued by insurers in the course of their Insurance business in Canada, are currently in force and include the applicable insurance coverage's stated on page 2 of this Certificate of Insurance, including advance notice of cancellation / reduction in coverage.

Name of person authorized to sign on behalf of Insurer(s) (Officer, Agent, Broker)

Telephone number

Signature

Date D / M / Y

1. General

The insurance policies required on page 1 of the Certificate of Insurance must be in force and must include the insurance coverage listed under the corresponding type of insurance on this page.

The policies must insure the Contractor and must include Her Majesty the Queen in Right of Canada as represented by the Minister of Public Works and Government Services as an additional Insured.

The insurance policies must be endorsed to provide Canada with not less than thirty (30) days notice in writing in advance of a cancellation of insurance or any reduction in coverage.

Without increasing the limit of liability, the policies must protect all insured parties to the full extent of coverage provided. Further, the policies must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.

2. Insurance – Specific Requirements

The Contractor must comply with the insurance requirements specified in herein. The Contractor must maintain the required insurance coverage for the duration of the Contract. Compliance with the insurance requirements does not release the Contractor from or reduce its liability under the Contract.

The Contractor is responsible for deciding if additional insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any additional insurance coverage is at the Contractor's expense, and for its own benefit and protection.

The Contractor must forward to the Contracting Authority within ten (10) days after the date of award of the Contract, a Certificate of Insurance evidencing the insurance coverage and confirming that the insurance policy complying with the requirements is in force. For Canadian-based Contractors, coverage must be placed with an Insurer licensed to carry out business in Canada, however, for Foreign-based Contractors coverage must be placed with an Insurer with an A.M. Best Rating no less than "A-". The Contractor must, if requested by the Contracting Authority, forward to Canada a certified true copy of all applicable insurance policies.

3. Commercial General Liability

The insurance coverage provided must not be substantially less than that provided by the latest edition of IBC Form 2100.

The policy must either include or be endorsed to include coverage for the following exposures or hazards if the Work is subject thereto:

- (a) Blasting.
- (b) Pile driving and caisson work.
- (c) Underpinning.
- (d) Removal or weakening of support of any structure or land whether such support be natural or otherwise if the work is performed by the insured contractor.

The policy must have the following minimum limits:

- (a) **\$5,000,000** Each Occurrence Limit;
- (b) **\$10,000,000** General Aggregate Limit per policy year if the policy contains a General Aggregate; and
- (c) **\$5,000,000** Products/Completed Operations Aggregate Limit.

Umbrella or excess liability insurance may be used to achieve the required limits.

This document is the document referred to as "Plans and Specifications" and marked "A" in the Articles of Agreement and includes the following:

"A"

Public Works and Government Services Canada
Commercial Mast Replacement
Citadel Hill
Halifax, NS
R077940.001

Index of Clauses

<u>Section No.</u>	<u>Title</u>	<u>Pages</u>
--------------------	--------------	--------------

Division 01

01 10 10	General Instructions	9
01 29 00	Project Particulars And Measurement	7
01 35 29	Health and Safety	14
01 71 00	Project Record Documents	1
01 74 11	Cleaning	1

-
1. Documents Required .1 Maintain at job site, one copy each of following:
- .1 Contract drawings
 - .2 Specifications
 - .3 Addenda
 - .4 Reviewed shop drawings/submissions
 - .5 Change orders
 - .6 Other modifications to Contract
 - .7 Field test reports
 - .8 Copy of approved work schedule
 - .9 Manufacturer's installation and application instructions
2. Site Conditions .1 Records of existing structures and geotechnical reports may be available for inspection at the offices of Public Works And Government Services Canada, 1713 Bedford Row, Halifax, N.S. This material is not necessarily up to date and is for information purposes only. It should be complemented by site visits and consultation with appropriate expertise.
3. Work Schedule And Completion Dates .1 Prepare and submit to the *Departmental Representative* within 5 days of notification of Contract award, one copy of the construction schedule in the form of a bar chart showing the dates for commencement and completion of each major activity of the work, including the work of subcontractors; dates for submissions, review and return of shop drawings, etc.; the dates of Substantial and Final Completion; and intended man hours of labour and equipment for each major item of work. If the schedule as submitted is unacceptable in any way, submit without delay a revised schedule satisfactory to the *Departmental Representative*.
- .2 The *Departmental Representative* is to notify the Contractor in writing of acceptance of the Construction Schedule. Comply with the Construction Schedule at all times. If, for

-
- any reason, the Construction Schedule is not followed, immediately notify the *Departmental Representative* of the change and submit a revised schedule for acceptance. Upon written acceptance by the *Departmental Representative*, this schedule will become the Construction Schedule.
- .3 Whenever required, give further written particulars concerning this schedule. The submission to and acceptance by the *Departmental Representative* of the Contractor's Construction Schedule or the furnishing of details and particulars thereto will not relieve the Contractor of any duties and responsibilities under the Contract.
- .4 The work on-site can begin in early October.
4. Measurement Responsibilities .1 Notify *Departmental Representative* sufficiently in advance of operations to permit required measurements for payment purposes.
5. Contractor's Use of Site .1 Co-operate with users of existing facilities.
- .2 Should interference's occur, take directions from *Departmental Representative*.
- .3 Do not unreasonably encumber site with materials or equipment.
- .4 Move stored products or equipment which interfere with operations of *Departmental Representative* or other Contractors.
- .5 Obtain and pay for use of additional storage or work areas needed for operations.
- .6 Comply with all regulations and authorities having jurisdiction over the work, whether on land or on water.

General Instructions

Page 3

-
- | | | |
|----|----------------------------|--|
| | .7 | Ensure no damage occurs to existing structures as a result of operations. Any said damage will be repaired at Contractor's expense. |
| | .8 | Provide temporary barriers and warning signs in locations where work is adjacent to areas used by the public. |
| 6. | <u>Codes and Standards</u> | |
| | .1 | Perform work in accordance with National Building Code of Canada (NBC) 2010 and any other code of provincial or local application provided that in any case of conflict or discrepancy, the more stringent requirements will apply. |
| | .2 | Meet or exceed requirements of specified standards, codes and referenced documents. When a standard or code is outdated, the latest edition will supersede the referenced date. |
| | .3 | Observe and enforce construction safety measures by Canadian Construction Safety Code and Construction Safety Code of Nova Scotia. In the event of conflict between any provisions of above authorities the most stringent provision will apply. |
| 7. | <u>Project Meetings</u> | |
| | .1 | <i>Departmental Representative</i> will arrange project meetings and assume responsibility for setting times and recording and distributing minutes. |
| 8. | <u>Setting Out of Work</u> | |
| | .1 | Do all detail surveys necessary for the work, including locating and maintaining working points, and establishing lines and elevations. Perform all layout work, and carefully preserve benchmarks, reference points and stakes. |
| | .2 | Provide such masts, scaffolds, batter boards, lines, straight edges, templates and |

other devices as may be necessary to facilitate layout, construction and inspection of the work. Whenever necessary, suspend work for such reasonable time as may be necessary to permit the *Departmental Representative* to check or inspect any portion of the Work. The Contractor will not be allowed any extra compensation or time for completion because of this suspension of work.

.3 Elevations for the various grades and features of the specified works to be referenced and properly related to a benchmark, which will be approved by the *Departmental Representative*.

.4 Verify all grades, lines, levels, and dimensions shown on the drawings and report any errors or inconsistencies to the *Departmental Representative* before commencing work. Provide and maintain well built batterboards at all points to facilitate the progress of the work. Establish all other grades, lines, levels required to facilitate the work.

9. Existing Services .1

Where work involves breaking into or connecting to existing services, carry out work at times directed by governing authorities, with minimum of disturbance to pedestrian and vehicular traffic.

.2 Before commencing work, establish location and extent of service lines in area of work and notify *Departmental Representative* of findings.

.3 Submit schedule to and obtain acceptance from *Departmental Representative* for any shut-down or closure of active service or facility. Adhere to approved schedule and provide notice to affected parties.

.4 Where unknown services are encountered, immediately advise *Departmental*

Representative and confirm findings in writing.

10. Contract Documents .1 N/A

.2 Contract Specifications:

.1 The general requirements and technical specifications are written solely for the General Contractor. They are organized into the NMS format of separate divisions and sections.

.2 Specification language is of the 'Short Form type' for example, where the word "provide" occurs, interpret it to mean "the Contractor shall furnish all labour, material and equipment necessary to complete the work".

.3 This Specification and accompanying drawings are intended to describe and provide for a finished project. They are intended to be complementary, and what is called for by either will be as binding as if called for by both. The Contractor shall understand that the work herein described will be complete in every detail, notwithstanding that every item necessarily involved is not particularly mentioned, and Contractor will be held to provide all labour, materials and equipment necessary for the entire completion of the work and will not avail himself of any errors or omissions.

11. Permits and Regulations

.1 Apply for, obtain and pay for all necessary permits, approvals and other authorizations required for the work.

.2 Comply with all by-laws, ordinances and regulations of all authorities having jurisdiction.

General Instructions

Page 6

-
- .3 Pay for any Municipal permits, per General Conditions as stated in the contract.
12. Cutting, Fitting and Patching .1 Execute cutting (including excavation), fitting and patching required to make work fit properly.
- .2 Make cuts with clean, true, smooth edges. Make patches inconspicuous in final assembly.
- .3 Where new work connects with existing and where existing work is altered, cut, patch and make good to match existing work.
- .3 Obtain *Departmental Representative's* approval before cutting, boring or sleeving, or excavating adjacent to load-bearing members.
13. Record of Construction .1 As work progresses, maintain accurate records to show all deviations from the contract drawings, with particular reference to work which will be concealed. Prior to the inspection of the work for the issuance of the Final Certificate of Completion, provide the *Departmental Representative* with one set of white prints of the drawings with all deviations shown neatly thereon.
- .2 Provide "as built" cross sections of any excavation, dredging or fill work.
14. Payment .1 Payment for all work under this contract to be according to the "Articles of Agreement".
- .2 No separate payment will be made for work specified under General Conditions, Supplementary Conditions or any sections of Specification under Division 01. The cost of this work is to be considered as overhead and to be included in the unit prices of the Contract.

-
- .3 Dimensional changes as directed by the *Departmental Representative* to suit existing conditions, but not resulting in additional work or materials, will not be considered as extra to the Contract.
15. Site Examination .1 All parties tendering should visit the site of the work prior to submission of tenders and make themselves thoroughly acquainted with site conditions, conditions of existing objects to be removed, tides, degree of exposure and all information necessary for the proper carrying out of the work covered by the drawings and this Specification. Submission of Tender will be deemed that Contractor is conversant with site conditions.
- .2 The *Departmental Representative* will give no consideration whatsoever to any claim by the Contractor resulting from failure to have made all the necessary investigations prior to tendering.
16. Cooperation & Assistance to Departmental Representative .1 Co-operate with *Departmental Representative* on inspection of work.
- .2 Provide assistance when requested.
17. Contractor's Representative .1 Continuously maintain on the site an authorized representative to whom communication may be addressed and who will be competent to speak for the Contractor in discussing work methods.
18. Workers Compensation .1 Contractor and all sub-contractors must be registered under the Workers Compensation Act and provide evidence of good standing.

-
- .2 At completion of Contract and before final payment is made, the Contractor will present to the *Departmental Representative* a Letter of Certification from the Workers Compensation Board, showing that all required assessments are paid in connection with all trades.
19. Laws, Standards Taxes and Fees .1 Comply with all laws and standards governing all or any part of the work, pay all applicable taxes and pay for all permits and certificates required in respect of the execution of the work. Where variances exist between the requirements of agencies governing all or any part of the work, the most restrictive will govern, but in no instance will the standards established by the drawings and this Specification, which exceed such requirements, be reduced.
20. Protection and Repair .1 Repair any damage resulting from operations under this contract.
21. Location of Equipment and Fixtures .1 Location of equipment, fixtures or any appurtenances indicated are to be considered approximate.
22. Inspection and Testing .1 The *Departmental Representative* may employ an Inspector and/or Testing Company to ensure work conforms with contract.
23. Disposal of Debris .1 Debris, including construction materials not incorporated in the work, oil products and containers, and other materials of this nature will be disposed of in suitable locations off the site. Disposal is the responsibility of the Contractor.

-
- .2 Paint debris...an independent analysis was conducted on the existing signal mast. This material may be reused in the renovation and based on the total lead results, the paint sample from the signal mast satisfies the disposal guidelines. Therefore, the painted material does not require special consideration for disposal with respect to lead and can be disposed of at an approved construction and demolition waste disposal site.

24. Existing Soils
Conditions

- .1 Any information pertaining to soils and all boreholes logs are furnished by the *Departmental Representative* as a matter of general information only and borehole descriptions or logs are not to be interpreted as descriptive of conditions at locations other than those described by the boreholes themselves.

25. Relics and
Antiquities

- .1 Protect relics, antiquities, items of historical or scientific interest such as cornerstones and contents, commemorative plaques, inscribed tablets, and similar objects found during course of work.
- .2 Give immediate notice to *Departmental Representative* and await written instructions before proceeding with work in this area.
- .3 Relics, antiquities and items of historical or scientific interest remain her Majesty's property.

PROJECT PARTICULARS

Work consists of replacement of the existing commercial mast and associated platforms and railings at the Halifax Citadel.

1. Description
of Work

- .1 The work under this contract involves replacing the existing commercial mast with a new one which characterizes the exact look and performance of the original mast built in 1980.
 - .1 For the purpose of increasing the lifespan of the mast, the main structural elements are to be fabricated from reinforced plastic/fiberglass in place of the existing, Douglas Fir.
 - .2 All codes and standards applicable to the mast design and fabrication are to be met or exceeded.
- .2 The work includes but is not limited to:
 - 1. Remove and dispose of the existing platform decking and support elements. Salvage the existing stainless steel mesh panels and eye bolts and rings for reuse.
 - 2. Remove all existing mast stays. Inspect rope, dead eyes, whipping etc. to confirm conformance with design drawings prior to disposal off-site. Salvage stainless steel dead eye straps for reuse. Existing 3/4" anchor chains to remain and be reused.
 - 3. Remove the lower mast, inspect to confirm conformance with design drawings and dispose of off-site. Note cleat details and configuration for incorporation in new lower mast. Salvage any attached stainless

Commercial Signal Mast Replacement**Citadel Hill****Halifax, NS****R.077940.001**

Project Particulars And Measurement

Page 2

-
- hardware, steel strap support to wall for reuse and leave existing granite base block undisturbed.
4. Salvage all components of the lightning protection and fall arrest systems for reuse.
 5. Inspect existing upper mast and lower yardarm for conformance with design drawings. PCA will salvage all existing pulleys and supply pulleys for reuse. Confirm suitable condition for reuse and salvage of all stainless hardware. Dispose of non-stainless hardware and supply suitable stainless replacements.
 6. Inspect existing upper yard arm for conformance with design drawings. Dispose of off-site. Salvage all stainless hardware for reuse. Dispose of non-stainless hardware and supply suitable stainless replacements.
 7. Design, supply, install and erect a new FRP/fibreglass lower mast, seal into granite base, repaint and reinstall the steel strap support to the wall.
 8. Clean out all existing granite gutters and the cast iron downspout and inspect foundation elements for the platform. Any required masonry or foundation repairs are extra work.
 9. Supply and install new support structure and deck matching original drawing details (all timber to be pressure treated, all hardware to be galvanized unless otherwise noted on original drawings). Re-install salvaged mesh panels for railing, eye bolts and mahogany ring support angles (all hardware to be stainless or brass, supplement any missing items with new hardware to match salvaged items) Note: reinstallation of the Mahogany Belt and Pin Rails is the responsibility of PCA.

10. Design, supply and install all new FRP/fibreglass crow's nest members, cheeks, yard holding block, main mast cap etc. Reuse salvaged (by PCA) hardware and supplement as required with new stainless hardware, turnbuckles, etc. Supply and install new 3/8" galvanized cable.
11. Install salvaged lower yard arm.
12. Install salvaged upper mast with new FRP/fibreglass FID, mast cap etc.
13. Design, supply and install new FRP/fibreglass upper yardarm.
14. Re-install all salvaged hardware. Supplement any missing items with new stainless hardware. Install new rope and pulleys supplied by PCA.
15. Supply and install all new mast stays with salvaged stainless dead eye straps. New dead-eyes to be solid machined HDPE or approved equal.
16. Reinstall all lightning protection and fall arrest components.
17. Supply complete set of replacement flags (specifications and listing of flags to follow).
18. Demonstrate complete operation of mast systems to the satisfaction of the Departmental representative.
19. Furnish shop drawings of all fabricated systems and accessories, as well as components to be reused, in accordance with the provisions of this Section. Shop drawings shall bear the seal of an engineer licensed to practice in the Province of Nova Scotia.
20. Furnish shop drawings which clearly show material sizes, types, styles, part or catalog numbers, complete details for the fabrication and erection of components. Such components include, but are not limited to, location, lengths, type and sizes

-
- of fasteners, clip angles, member sizes, and connection details.
21. Submit the manufacturer's published literature including structural design data, structural properties data, structural shapes load/deflection tables, certificates of compliance, test reports as applicable, concrete anchor systems and their allowable load tables, and design calculations for systems not previously designed in the Reference Drawings.
 22. Submit, if requested, sample pieces of each item specified herein for acceptance by the Departmental Representative as to quality and color.
 - a. Sample pieces shall be manufactured using the same method required to conduct the work, as outlined in this specification.
 23. Provide calculations and drawings sealed by a Registered Professional Engineer.
- .3 All items to be provided shall be furnished only by manufacturers having experience in the design and manufacture of similar products and systems.
- .1 If requested, experience shall be demonstrated by a record of similar successful installations.
 - .2 Fabricator(s) shall be experienced in successfully producing FRP fabrications similar to that indicated for this project, with sufficient production capacity to produce required units without causing delay in the work.
 - .3 In addition to requirements of these specifications, comply with manufacturer's instructions and recommendations for work.

-
- .4 Substitution of any component or modification of system shall be allowed when approved by the Departmental Representative.
 - .4 The design criteria of the FRP products including connections shall be in accordance with governing building codes and generally accepted standards in the FRP industry, such as:
 - .1 National Research Council
 - .1 National Building Code of Canada
 - .2 Canadian Standards Association
 - .1 CSA S806-12, Design and construction of building structures with fiber-reinforced polymers
 - .3 AMERICAN SOCIETY FOR TESTING AND MATERIALS
 - .1 ASTM D-638-Tensile Properties of Plastics
 - .2 ASTM D-790-Flexural Properties of Unreinforced and Reinforced Plastics
 - .3 ASTM D-2344-Apparent Interlaminar Shear Strength of Parallel Fiber Composites by Short Beam Method
 - .4 ASTM D-696-Coefficient of Linear Thermal Expansion for Plastics
 - .5 ASTM E-84-Surface Burning Characteristics of Building Materials
 - .5 Structures shall be designed for a loads associated with a 1/100 year storm event for wind and snow/icing. The fatigue life of all FRP components shall be for a minimum of 100 years.

-
- .6 Materials shall be selected for resistance to environmental exposure such as UV rays, for the duration of the design life of 50 years.
 - .7 All fiberglass components shall be shop fabricated, piece match marked to assembly or erection drawings.
 - .8 Manufactured materials shall be delivered in original, unbroken pallets, packages, containers, or bundles bearing the label of the manufacturer. Adhesives, resins and their catalysts and hardeners shall be crated or boxed separately and noted as such to facilitate their movement to a dry indoor storage facility.
 - .9 All materials shall be carefully handled to prevent them from abrasion, cracking, chipping, twisting, other deformations, and other types of damage. Store items in an enclosed area and free from contact with soil and water.
 - .1 Store adhesives, resins and their catalysts and hardeners in dry indoor storage facilities between 70 and 85 degrees Fahrenheit (21 to 29 degrees Celsius) until they are required.
 - .10 All FRP items shall be composed of fiberglass reinforcements and resins in qualities, quantities, properties, arrangements and dimensions as necessary to meet the design requirements and dimensions as specified in the Contract Documents.
 - .1 Fiberglass reinforcement shall be a combination of continuous roving, continuous strand mats and surfacing veils in sufficient quantities as needed by the application and/or physical properties required.
 - .2 Resin shall be POLYESTER or EPOXY.

Commercial Mast Replacement**Citadel Hill****Halifax, NS****R077940.001**

Project Particulars And Measurement

Page 7

-
- .3 All finished surfaces of FRP items and fabrications shall be smooth, resin rich, free of voids and without dry spots, cracks, crazes or unreinforced areas.
 - .4 All glass fibers shall be well covered with resin to protect against their exposure due to wear or weathering.
 - .5 After fabrication, all cut ends, holes and abrasions of FRP fiberglass grating shall be sealed with a resin compatible to the fiberglass or structural system.
 - .11 FRP structural systems supplied shall meet the dimensional requirements and tolerances as shown or specified. The Contractor shall provide and/or verify measurements in field for work fabricated to fit field conditions as required by manufacturer to complete the work.
 - .12 All shop fabricated cuts, drilled holes, etc. shall be coated with resin to provide maximum corrosion resistance. All field fabricated cuts, drilled holes, etc. shall be coated similarly by the contractor in accordance with the manufacturer's instructions.
 - .13 Hardware shall be re-used where possible. Where new hardware is to be provided, it shall be similar in appearance and construction to the hardware shown on the Reference Drawings.
 - .14 Structural components shall be fully fabricated and shop assembled to the fullest extent possible, generally limited only by shipping requirements
 - .15 Shop inspections are to be authorized as required by the Departmental Representative at PWGSC's expense. The Contractor shall give ample notice to the Departmental Representative prior to the beginning of any fabrication work so that inspection may be provided.

Commercial Signal Mast Replacement**Citadel Hill****Halifax, NS****R.077940.001**

Project Particulars And Measurement

Page 8

-
- .16 The FRP elements shall be as free, as commercially possible, from visual defects such as foreign inclusions, delaminations, blisters, resin burns, air bubbles and pits. The surface shall have a smooth finish.
- .17 The demolition and disposal of all replaced wood and metal elements shall be the responsibility of the Contractor and associated costs shall be included in the cost of the Work.
- .1 Parks Canada shall have the option to retain all non reused elements for historical purposes.
- .2 All other materials shall become the property of the Contractor for reuse, recycling or disposal in a Provincially approved facility.
- .18 Costs associated with travel to and from the site of the Work, shall be included in the Contractor's lump sum price.
- .19 The following constraints are to be considered:
- .1 Direct access to the site of the Work for heavy machinery is limited in size to the openings in the fortification walls. (ie. Light duty trucks and zoom booms). Restrictive access to the site for lifting equipment through the entrance tunnel or from the ditch which is further restricted by the ramp.
- .2 A site visit is necessary to identify all other constraints.
- .20 Work methods and procedures, as well as safety procedures must take into account that the execution of the Work will be performed in an operating Parks Canada facility.
- .21 Heritage, Architectural, Safety and Engineering support will be provided to the Contractor in the form of technical reviews of the submitted Shop

Commercial Mast Replacement

Citadel Hill

Halifax, NS

R077940.001

Project Particulars And Measurement

Page 9

Drawing, Erection Drawings and Safety Plans through the Departmental Representative.

- .1 Engineering drawings of the 1980's installation of the masts have been provided for as Reference Materials.

1.1 RELATED WORK

N/A

1.2 DEFINITIONS

.1 COSH: Canada Occupational Health and Safety Regulations made under Part II of the Canada Labour Code.

.2 Competent Person: means a person who is:

.1 Qualified by virtue of personal knowledge, training and experience to perform assigned work in a manner that will ensure the health and safety of persons in the workplace, and;

.2 Knowledgeable about the provisions of occupational health and safety statutes and regulations that apply to the Work and;

.3 Knowledgeable about potential or actual danger to health or safety associated with the Work.

.3 Medical Aid Injury: any minor injury for which medical treatment was provided and the cost of which is covered by Workers' Compensation Board of the province in which the injury was incurred.

.4 PPE: Personal Protective Equipment

.5 Work Site: where used in this section shall mean areas, located at the premises where Work is undertaken, used by Contractor to perform all of the activities associated with the performance of the Work.

1.3 SUBMITTALS

.1 Make submittals in accordance with the details outlined in this specification.

.2 Submit site-specific Health and Safety Plan prior to commencement of Work.

-
- .1 Submit within 10 work days of notification of Bid Acceptance. Provide 3 copies.
 - .2 Departmental Representative will review Health and Safety Plan and provide comments.
 - .3 Revise the Plan as appropriate and resubmit within 5 work days after receipt of comments.
 - .4 Departmental Representative's review and comments made of the Plan shall not be construed as an endorsement, approval or implied warranty of any kind by Canada and does not reduce Contractor's overall responsibility for Occupational Health and Safety of the Work.
 - .5 Submit revisions and updates made to the Plan during the course of Work.
-
- .3 Submit name of designated Health & Safety Site Representative and support documentation specified in the Safety Plan.
 - .4 Submit building permit, compliance certificates and other permits obtained, as required.
 - .5 Submit copy of Letter in Good Standing from Provincial Workers Compensation or other department of labour organization.
 - .1 Submit updated of Letter of Good Standing whenever expiration date occurs during the period of Work.
 - .6 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
 - .7 Submit copies of incident reports.

.8 Submit WHMIS MSDS - Material Safety Data Sheets.

1.4 COMPLIANCE
REQUIREMENTS

.1 Comply with Occupational Health and Safety Act for Province of Nova Scotia, and Regulations made pursuant to the Act.

.2 Comply with Canada Labour Code - Part II (entitled Occupational Health and Safety) and the Canada Occupational Health and Safety Regulations (COSH) as well as any other regulations made pursuant to the Act.

.1 The Canada Labour Code can be viewed at:

[www.http://laws.justice.gc.ca/en/L-2/](http://laws.justice.gc.ca/en/L-2/)

.2 COSH can be viewed at:
[www.http://laws.justice.gc.ca/eng/SOR-86-304/ n e .html](http://laws.justice.gc.ca/eng/SOR-86-304/n e .html)

.3 A copy may be obtained at: Canadian Government Publishing
Public Works & Government Services
Canada Ottawa, Ontario, K1A 0S9 Tel:
(819) 956-4800 (1-800-635-7943)
Publication No. L31-85/2000 E or F)

.3 Observe construction safety measures of:

.1 Part 8 of National Building Code

.2 Municipal by-laws and ordinances.

.4 In case of conflict or discrepancy between above specified requirements, the more stringent shall apply.

.5 Maintain Workers Compensation Coverage in good standing for duration of Contract. Provide proof of clearance through submission of Letter in Good Standing.

.6 Medical Surveillance: Where prescribed by legislation or regulation, obtain and maintain worker medical surveillance documentation.

1.5 RESPONSIBILITY

.1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons and environment adjacent to the site to extent that they may be affected by conduct of Work.

.2 Comply with and enforce compliance by all workers, sub-contractors and other persons granted access to Work Site with safety requirements of Contract Documents, applicable federal, provincial, and local by-laws, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.6 SITE CONTROL
AND ACCESS

.1 Control the Work and entry points to Work Site. Approve and grant access only to workers and authorized persons. Immediately stop and remove non-authorized persons.

.1 Departmental Representative will provide names of those persons authorized by Departmental Representative to enter onto Work Site and will ensure that such authorized persons have the required knowledge and training on Health and Safety pertinent to their reason for being at the site, however, Contractor remains responsible for the health and safety of authorized persons while at the Work Site.

.2 Isolate Work Site from other areas of the premises by use of appropriate means.

.1 Erect fences, hoarding, barricades and temporary lighting as required to effectively delineate the

Work Site, stop non-authorized entry, and to protect pedestrians and vehicular traffic around and adjacent to the Work Site.

.2 Post signage at entry points and other strategic locations indicating restricted access and conditions for access.

.3 Use professionally made signs with bilingual message in the 2 official languages or international known graphic symbols.

.3 Provide safety orientation session to persons granted access to Work Site. Advise of hazards and safety rules to be observed while on site.

.4 Ensure persons granted site access wear appropriate PPE. Supply PPE to inspection authorities who require access to conduct tests or perform inspections.

.5 Secure Work Site against entry when inactive or unoccupied and to protect persons against harm.

1.7 PROTECTION

.1 Give precedence to safety and health of persons and protection of environment over cost and schedule considerations for Work.

.2 Should unforeseen or peculiar safety related hazard or condition become evident during performance of Work, immediately take measures to rectify situation and prevent damage or harm. Advise Departmental Representative verbally and in writing.

1.8 FILING OF NOTICE

.1 File Notice of Project with pertinent provincial health and safety authorities prior to beginning of Work.

.1 Departmental Representative will assist in locating address if needed.

1.9 PERMITS

.1 Post permits, licenses and compliance certificates as required by governing authorities.

.2 Where a particular permit or compliance certificate cannot be obtained, notify Departmental Representative in writing and obtain approval to proceed before carrying out applicable portion of work.

1.10 HAZARD ASSESSMENTS

.1 Perform site specific health and safety hazard assessment of the Work and its site.

.2 Carryout initial assessment prior to commencement of Work with further assessments as needed during progress of work, including when/if new trades and subcontractors arrive on site.

.3 Record results and address in Health and Safety Plan.

.4 Keep documentation on site for entire duration of the Work.

1.11 PROJECT/SITE
CONDITIONS

.1 Following are potential health, environmental and safety hazards at the site for which Work may involve contact with:

.1 Existing hazardous and controlled products stored on site:

.1 unknown.

.2 Existing hazardous substances or contaminated materials:

.1 Refer to Hazardous Substances Report

-
- .3 Known latent site and environmental conditions:
 - .1 work at heights
 - .2 visitors, staff and general public
 - .3 limited site access
 - .4 Facility on-going operations:
 - .1 Halifax Citadel is active National Historic Site, many visitors and events.
 - .2 Other construction projects and activities at adjacent locations.

.2 Above items shall not be construed as being complete and inclusive of potential health and safety hazards encountered during Work.

.3 Include above items in the hazard assessment of the Work.

.4 MSDS Data sheets of pertinent hazardous and controlled products stored on site can be obtained from Departmental Representative.

1.12 MEETINGS

- .1 Attend pre-construction health and safety meeting, convened and chaired by Departmental Representative, prior to commencement of Work, at time, date and location determined by Departmental Representative. Ensure attendance of:
 - .1 Superintendent of Work
 - .2 Designated Health & Safety Site Representative
 - .3 Subcontractors
- .2 Conduct regularly scheduled tool box and safety meetings during the Work in conformance with Occupational Health and Safety regulations.

.3 Keep documents on site.

1.13 HEALTH AND
SAFETY PLAN

.1 Prior to commencement of Work, develop written Health and Safety Plan specific to the Work. Implement, maintain, and enforce Plan for entire duration of Work and until final demobilization from site.

.2 Health and Safety Plan shall include the following components:

.1 List of health risks and safety hazards identified by hazard assessment.

.2 Control measures used to mitigate risks and hazards identified.

.3 On-site Contingency and Emergency Response Plan as specified below.

.4 On-site Communication Plan as specified below.

.5 Name of Contractor's designated Health & Safety Site Representative and information showing proof of his/her competence and reporting relationship in Contractor's company.

.6 Names, competence and reporting relationship of other supervisory personnel used in the Work for occupational health and safety purposes.

.3 On-site Contingency and Emergency Response Plan shall include:

.1 Operational procedures, evacuation measures and communication process to be implemented in the event of an emergency.

.2 Evacuation Plan: site and floor plan layouts showing escape routes, marshalling areas. Details on alarm notification methods, fire drills,

location of fire fighting equipment and other related data.

.3 Name, duties and responsibilities of persons designated as Emergency Warden(s) and deputies.

.4 Emergency Contacts: name and telephone number of officials from:

.1 General Contractor and subcontractors.

.2 Pertinent Federal and Provincial Departments and Authorities having jurisdiction.

.3 Local emergency resource organizations.

.5 Harmonize Plan with Facility's Emergency Response and Evacuation Plan. Departmental Representative will provide pertinent data including name of PWGSC and Facility Management contacts.

.4 On-site Communication Plan:

.1 Procedures for sharing of work related safety information to workers and subcontractors, including emergency and evacuation measures.

.2 List of critical work activities to be communicated with Facility Manager which have a risk of endangering health and safety of Facility users.

.5 Address all activities of the Work including those of subcontractors.

.6 Review Health and Safety Plan regularly during the Work. Update as conditions warrant to address emerging risks and hazards, such as whenever new trade or subcontractor arrive at Work Site.

.7 Departmental Representative will respond in writing, where deficiencies or concerns are noted and may request re-submission of the Plan with correction of deficiencies or concerns.

.8 Post copy of the Plan, and updates, prominently on Work Site.

1.14 SAFETY
SUPERVISION

.1 Employ Health & Safety Site Representative responsible for daily supervision of health and safety of the Work.

.2 Health & Safety Site Representative may be the Superintendent of the Work or other person designated by Contractor and shall be assigned the responsibility and authority to:

.1 Implement, monitor and enforce daily compliance with health and safety requirements of the Work

.2 Monitor and enforce Contractor's site-specific Health and Safety Plan.

.3 Conduct site safety orientation session to persons granted access to Work site.

.4 Ensure that persons allowed site access are knowledgeable and trained in health and safety pertinent to their activities at the site or are escorted by a competent person while on the Work Site.

.5 Stop the Work as deemed necessary for reasons of health and safety.

.3 Health & Safety Site Representative must:

.1 Be qualified and competent person in occupational health and safety.

.2 Have site-related working experience specific to activities of the Work.

.3 Be on Work Site at all times during execution of the Work.

.4 All supervisory personnel assigned to the Work shall also be competent persons.

.5 Inspections:

.1 Conduct regularly scheduled safety inspections of the Work on a minimum bi-weekly basis. Record deficiencies and remedial action taken.

.2 Follow-up and ensure corrective measures are taken.

.6 Cooperate with Facility's Occupational Health and Safety representative should one be designated by Departmental Representative.

.7 Keep inspection reports and supervision-related documentation on site.

1.15 TRAINING

.1 Use only skilled workers on Work Site who are effectively trained in occupational health and safety procedures and practices pertinent to their assigned task.

.2 Maintain employee records and evidence of training received. Make data available to Departmental Representative upon request.

.3 When unforeseen or peculiar safety-related hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction and advise Departmental Representative verbally and in writing.

1.16 MINIMUM

SITE SAFETY RULES

.1 Notwithstanding requirement to abide by federal and provincial health and safety regulations; ensure the following minimum safety rules are obeyed by persons granted access to Work Site:

.1 Wear appropriate PPE pertinent to the Work or assigned task; minimum being hard hat, safety footwear, safety vest, safety glasses and hearing protection.

.2 Immediately report unsafe condition at site, near-miss accident, injury and damage.

.3 Maintain site and storage areas in a tidy condition free of hazards causing injury.

.4 Obey warning signs and safety tags.

.2 Brief persons of disciplinary protocols to be taken for non-compliance.

1.17 CORRECTION OF

NON-COMPLIANCE

.1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Departmental Representative.

.2 Provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.

.3 Departmental Representative will stop Work if non-compliance of health and safety regulations is not corrected in a timely manner.

1.18 INCIDENT

REPORTING

.1 Investigate and report the following incidents to Departmental Representative:

-
- .1 Incidents requiring notification to Provincial Department of Occupational Safety and Health, Workers Compensation Board or to other regulatory Agency.
 - .2 Medical aid injuries.
 - .3 Property damage in excess of \$10,000.00,
 - .4 Interruptions to Facility operations resulting in an operational lost to a Federal department in excess of \$5000.00.
 - .2 Submit report in writing.
 - 1.19 HAZARDOUS PRODUCTS
 - .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS).
 - .2 Keep MSDS data sheets for all products delivered to site.
 - .1 Post on site.
 - .2 Submit copy to Departmental Representative.
 - 1.20 BLASTING
 - .1 Blasting or other use of explosives is not permitted on site.
 - 1.21 POWDER ACTUATED DEVICES
 - .1 Use powder actuated fastening devices only after receipt of written permission from Departmental Representative.
 - 1.22 CONFINED SPACES
 - .1 Abide by occupational health and safety regulations regarding work in confined spaces.

-
- 1.23 SITE RECORDS
- .1 Maintain on Work Site copy of safety related documentation and reports stipulated to be produced in compliance with Acts and Regulations of authorities having jurisdiction and of those documents specified herein.
 - .2 Upon request, make available to Departmental Representative or authorized Safety Officer for inspection.
- 1.24 POSTING OF DOCUMENTS
- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on Work Site in accordance with Acts and Regulations of Province having jurisdiction.
 - .2 Post other documents as specified herein, including:
 - .1 Site specific Health and Safety Plan
 - .2 WHMIS data sheets

-
1. Record Drawings
- .1 *Departmental Representative* will provide PDF drawings for use to develop design and record drawings.
 - .2 Maintain project record drawings and accurately record deviations from contract documents caused by site conditions and changes ordered by *Departmental Representative*.
 - .3 Mark changes in red coloured ink.
 - .4 Record following information:
 - .1 Elevations of various elements in relation to Chart Datum.
 - .2 Field changes in dimensions and details.
 - .3 Changes made by Change Order.
 - .5 At completion of project and prior to final inspection, neatly transfer notations to second set and submit both sets to *Departmental Representative*.



Construction Notes: Reproduction Commercial Signal Flags C.1869

The below referenced documents are attached.

- A. Quantity of each Flag by name to be provided by the supplier.
- B. Commercial Signals Construction Specifications c1869 Halifax Citadel. Scale drawings by Parks Canada/Matt Seimers & Glenn Tozer.

Standards:

- Fabric employed in the manufacture of all variants of signal flags must be Tough-Tex® 100% 2-Ply, Spun Woven Polyester Fabric.
- Colour scheme for each Signal Flag must be in accordance with those reflected in the chart noted in reference B above. Colour samples to be submitted for approval prior to fabrication.
- The sleeve for each Signal Flag may be left open and does not have to be rigged with hemp or manila rope.
- Edges of all flags must be sewn flat with 2 rows of stitching to prevent fraying.
- The size of each flag will correspond to the dimensions provided in reference A above. Submit one 3 colour finished flag for review and approval of all fabrication details prior to proceeding with other fabrications.
- There are 64 flags in total. The figures in Ref. A show 62 flag dimensions referenced by name. The remaining 2 flags are the Union Jack and the 1867 Official (37star) US flag.
 - *US Flag: Pantone 281C blue, 193C red and white*
 - *UK and all other flags : Pantone 280C blue, 186C red and white.*

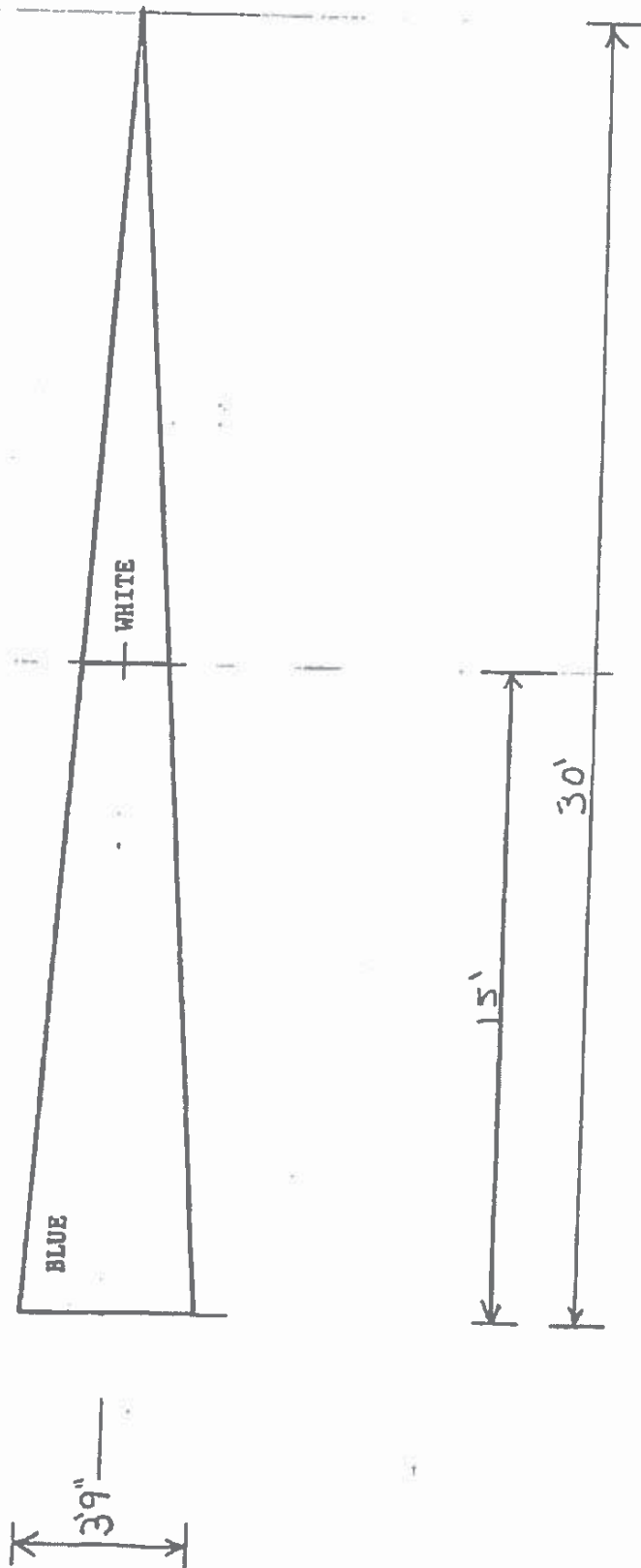
Contractor Review of Sample Signal Flags:

- Upon award, Contractors may examine samples of reproduction Signal Flags at the Halifax Citadel National Historic Site by appointment during routine business hours.

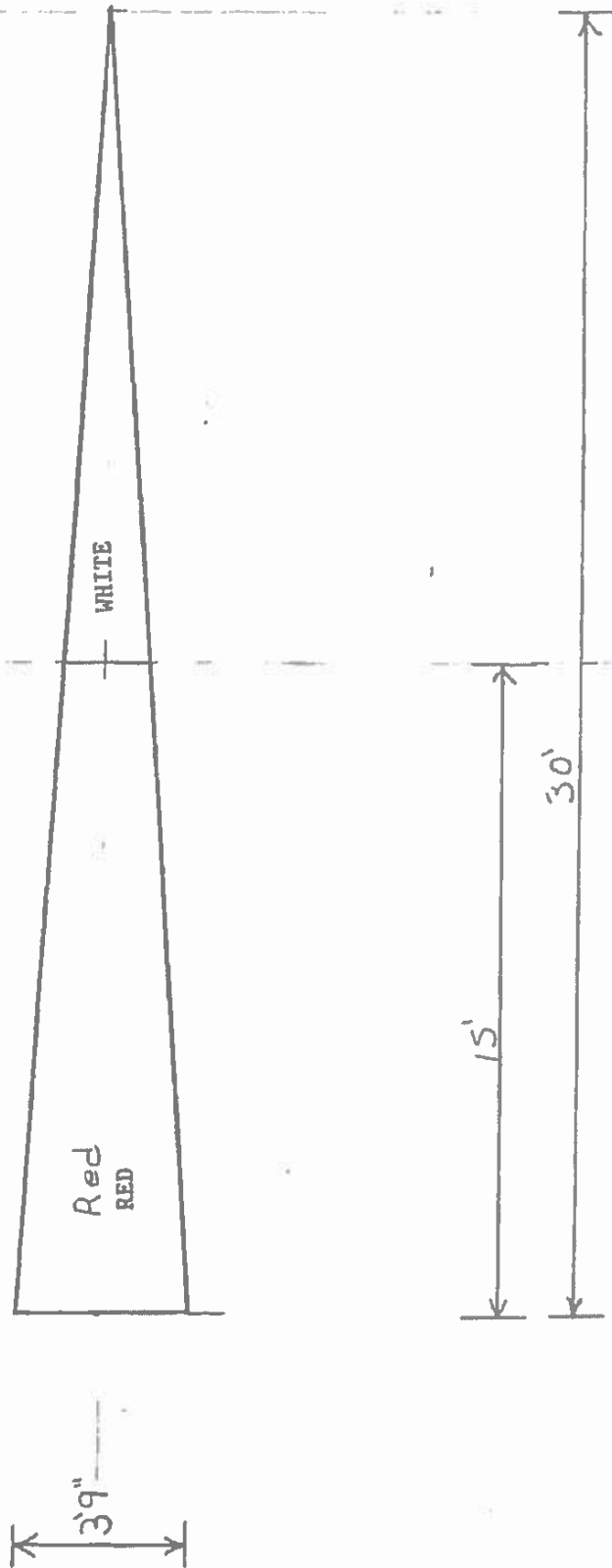
A. Quantity of each Flag by name to be provided by the supplier.

No.	Name	Quantity
1	Ship Pennant	2
2	Barque Pennant	2
3	Brig Pennant	2
4	Brigantine Pennant	2
5	Enemy's Man of War Pennant	2
6	Schooner Pennant	2
7	Steamer Pennant	2
8	Transport Pennant	2
9	Two Decker Pennant	2
10	Frigate Pennant	2
11	Brigantine of War Pennant	2
12	Schooner of War Pennant	2
13	Interogative or Demand Pennant	2
14	Enemy's Mercantman	2
15	French (CD Hunter)	2
16	Flag of Truce	2
17	Military Telegraph	3
18	Cunard	2
19	Tobin	2
20	G & A Mitchell	2
21	Bolton	2
22	Allison & Co	2
23	T.C. Kinear & Co	2
24	Wm Hare	2
25	Salter & Twining	2
26	Young & Hart	2
27	Hamilton	2
28	West	2
29	T.A.S. Wolfe & Son	2
30	G.C. Harvey	2
31	W.H. Creighton	2
32	Noble	2
33	B Wier & Co	2
34	Rudolph	2
35	Moran	2
36	A. Scott	2
37	Stairs Son & Morrow	2
38	J.G.A. Creighton & Co	2
39	S.F. Barss	2
40	Esson & Boak	2
41	Pryor & Son	2
42	Duffus & Co	2
43	Cronan	2
44	Caldwell	2
45	C.W. Wright	2
46	J.T. Wainright & Co	2
47	Oxley & Co	2
48	Full	2
49	Fay	2
50	Strachan	2
51	Albtro & Co	2
52	C.H. Starr & Co	2
53	Deblois & Merkle	2
54	Black Bros & Co	2
55	Bauld & Gibson	2
56	McLean Campbell & Co	2
57	Wm Lawson	2
58	J.M Watson & Co	2
59	R.J. & W. Hart	2
60	Murphy & Twining	2
61	J.E. Cummings	2
62	W.M Hare	2
63	Union Jack	3
64	1867 US Flag	3

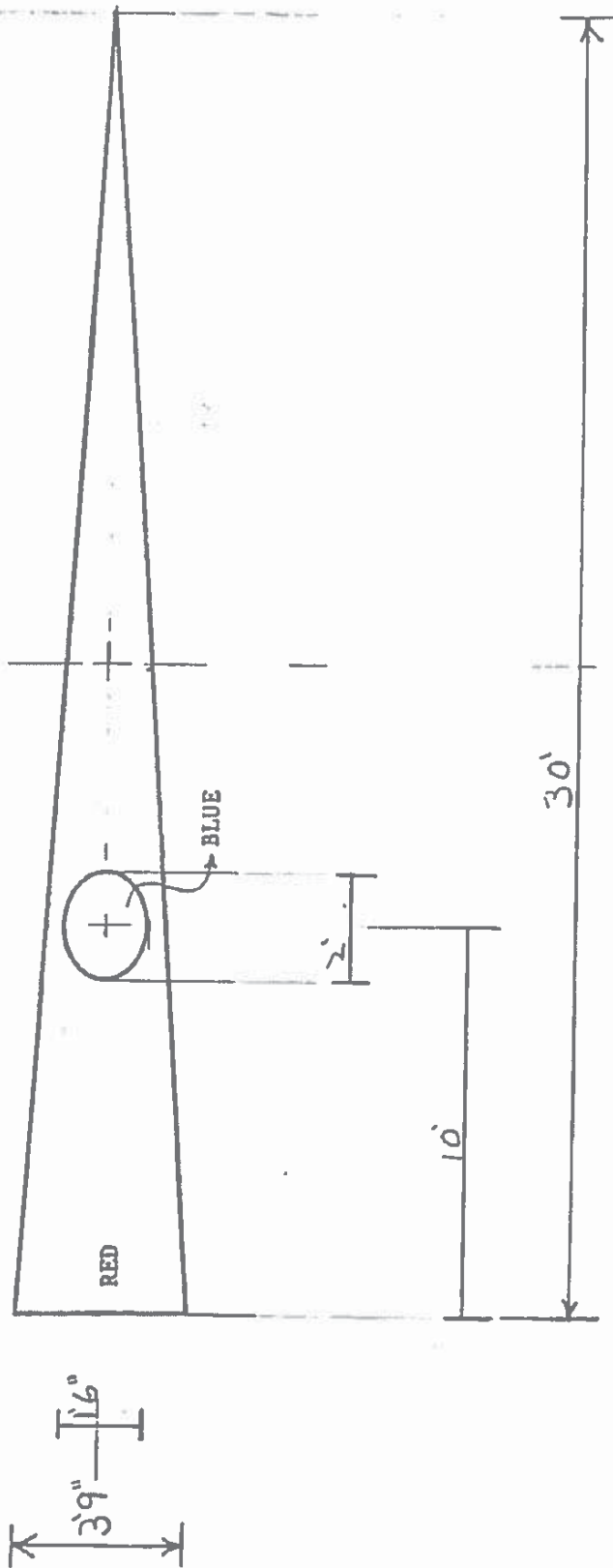
Drawn By: Matt Siemers Scale: 1/2 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: *Barge Pennant*
Drawing Number: *P 1*
Responsible Officer: Scott Watson, ISO-HDC



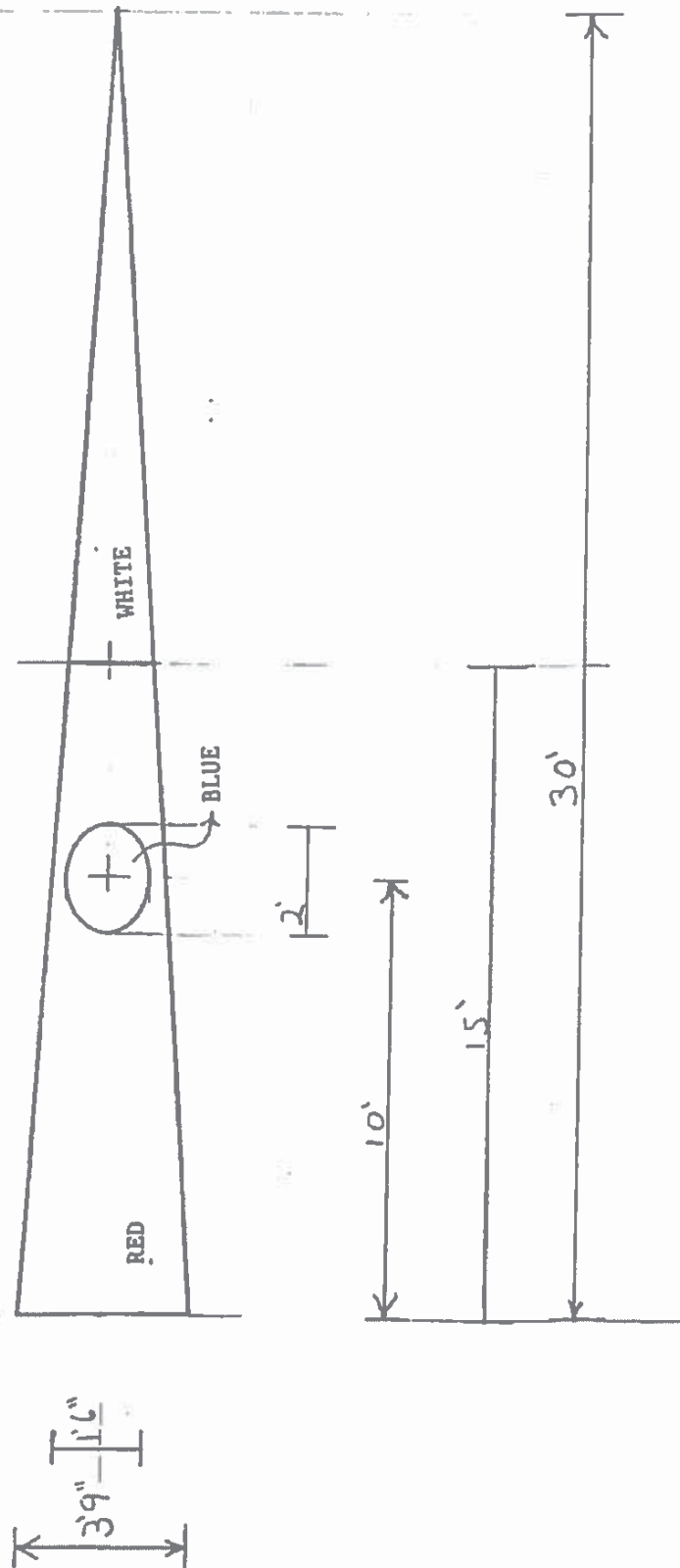
Drawn By: Matt Siemers Scale: 1/2 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: Brigantine Pennant
Drawing Number: P.2
Responsible Officer: Scott Watson, ISO-HDC



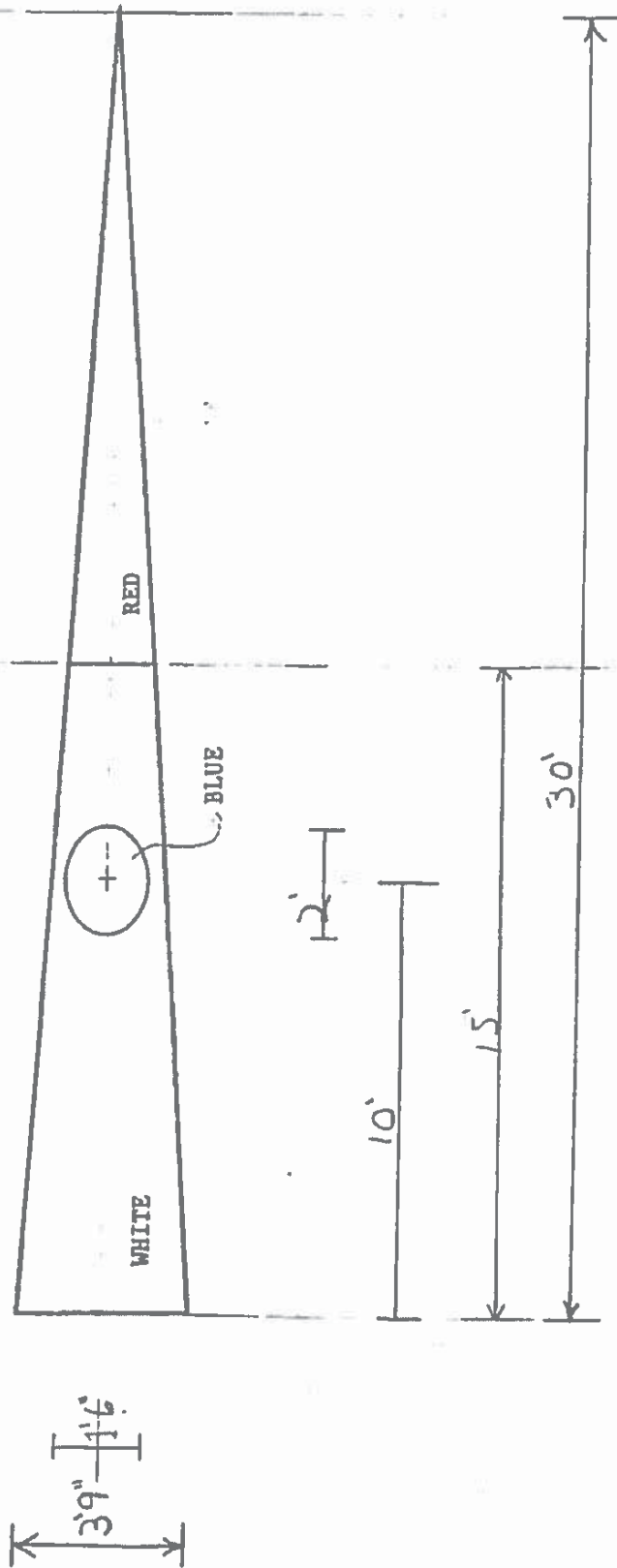
Drawn By: Matt Siemens Scale: 1/4" = 1' inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: TWO Decker Pennant
Drawing Number: P. 3
Responsible Officer: Scott Watson, ISO-HDC



Drawn by: Matt Siemens Scale: 1/4 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: Originating of War pennant
Drawing Number: P. 4
Responsible Officer: Scott Watson, ISO-HDC



Drawn By: Matt Siemers Scale: 1/4 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: Schooner at War pennant
Drawing Number: P. 5
Responsible Officer: Scott Watson, ISO-HDC



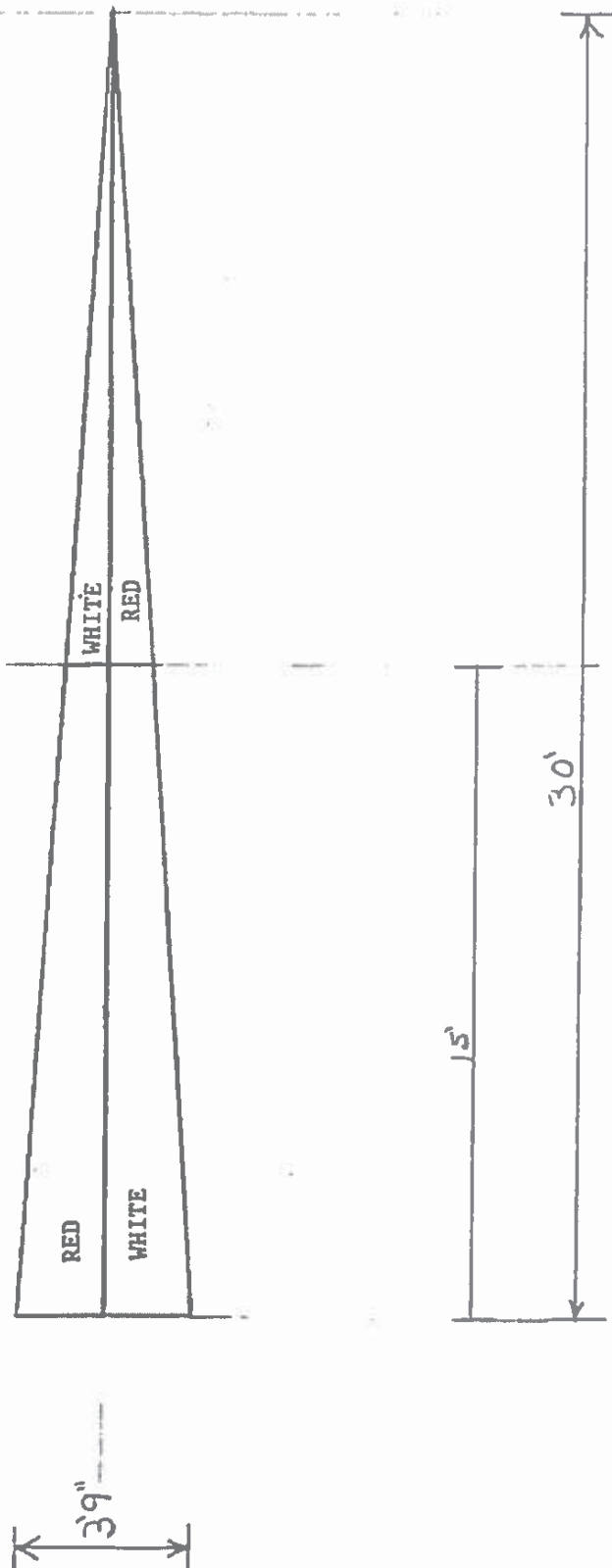
Design Based on Historic Chart

Project Title: Commercial Signal Flags

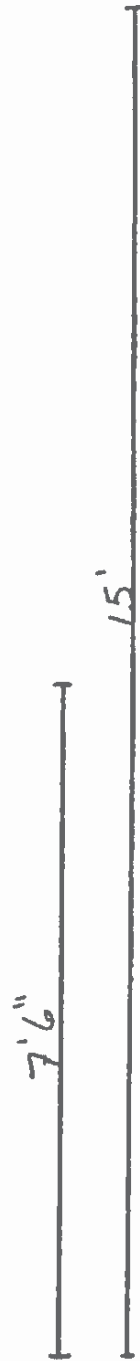
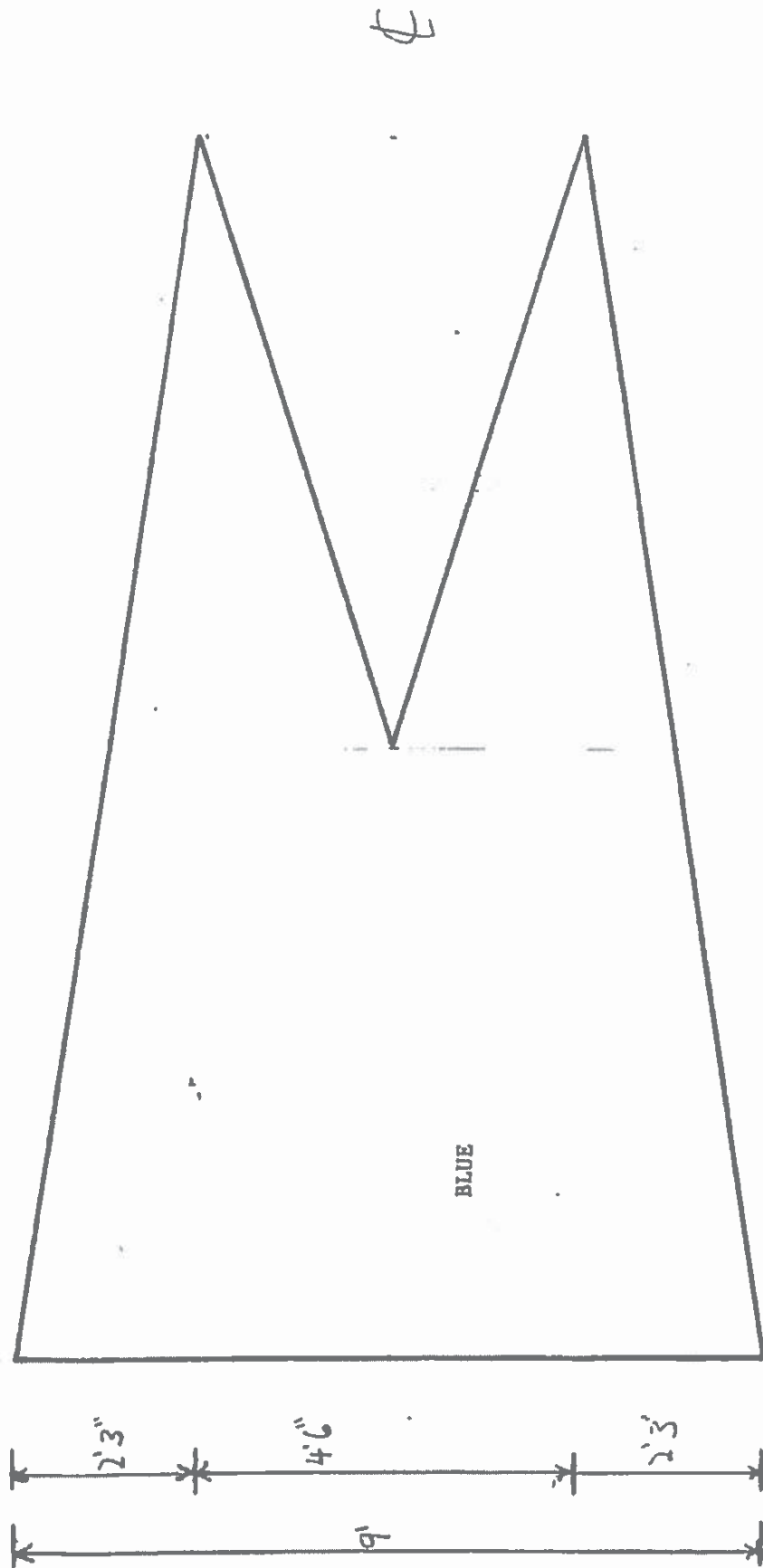
Drawing Title: Interrogative, Demand, Demand

Drawing Number: P 6

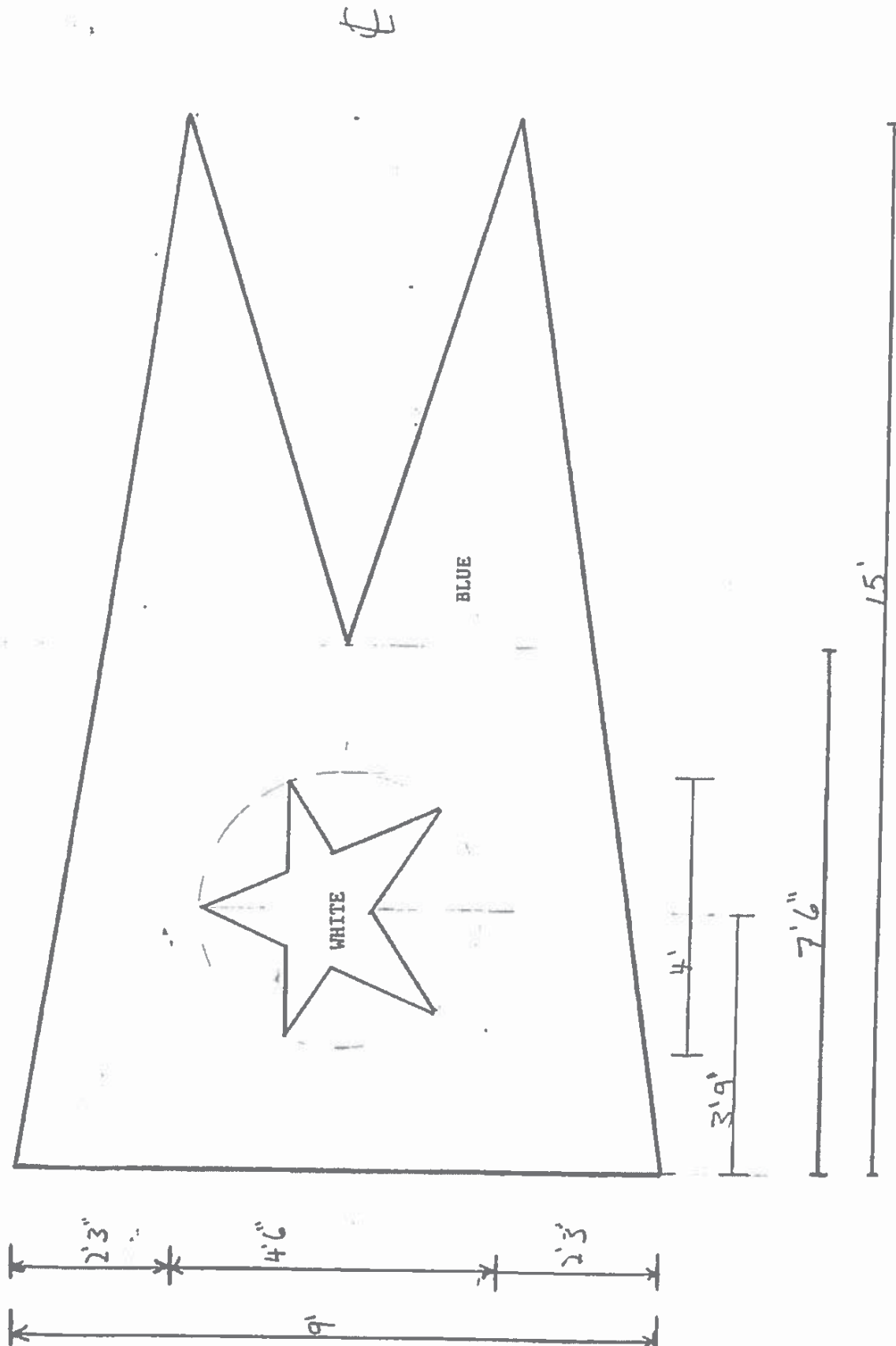
Responsible Officer: Scott Watson, ISO-HDC



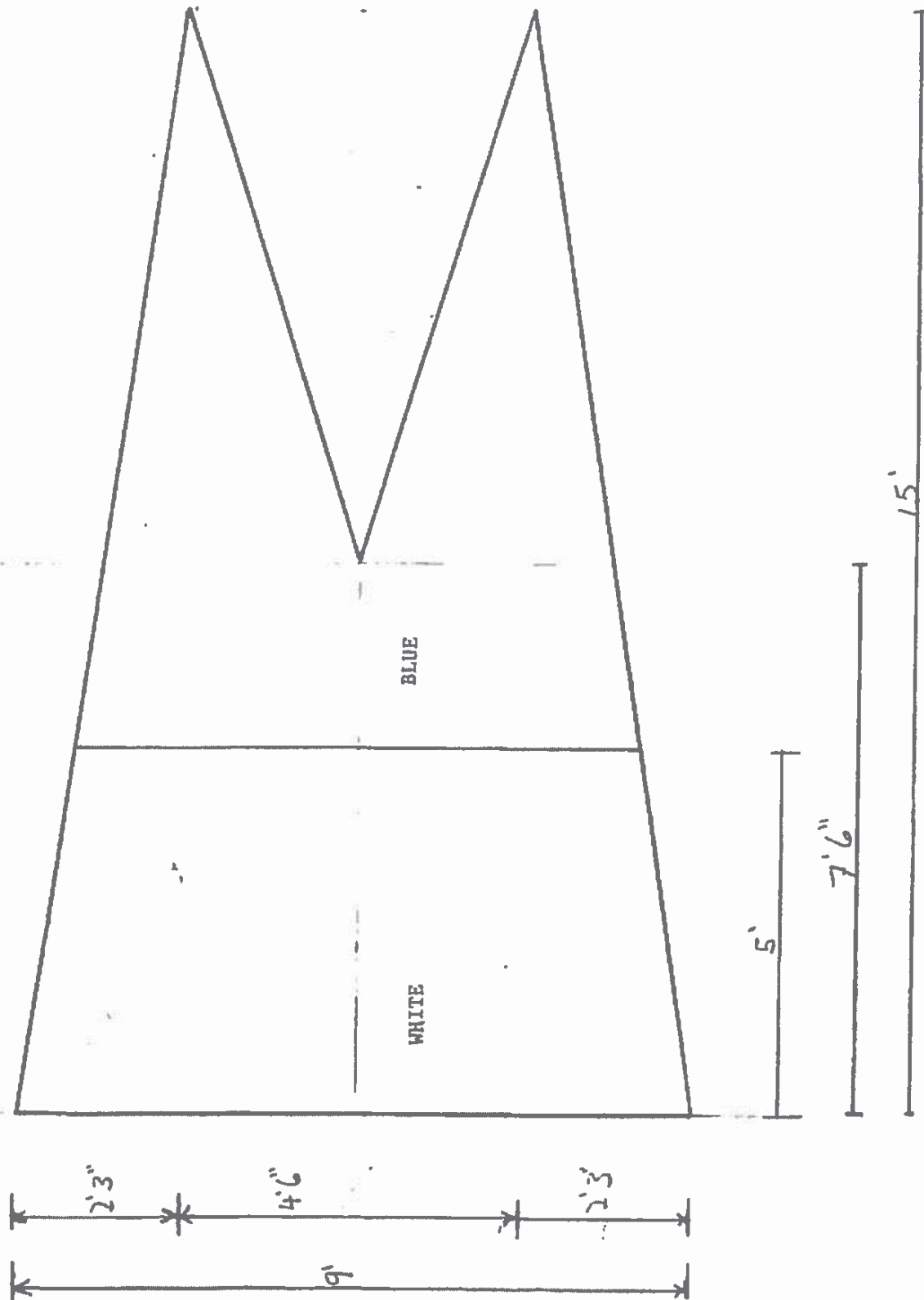
Drawn By: Matt Siemers Scale: 1/2 inch
Design based on historic chart
Project Title: Commercial Signal Flags
Drawing Title: All: Sea & Co. Barge
Drawing Number: 0.1.
Responsible Officer: Scott Watson, ISO-HDC



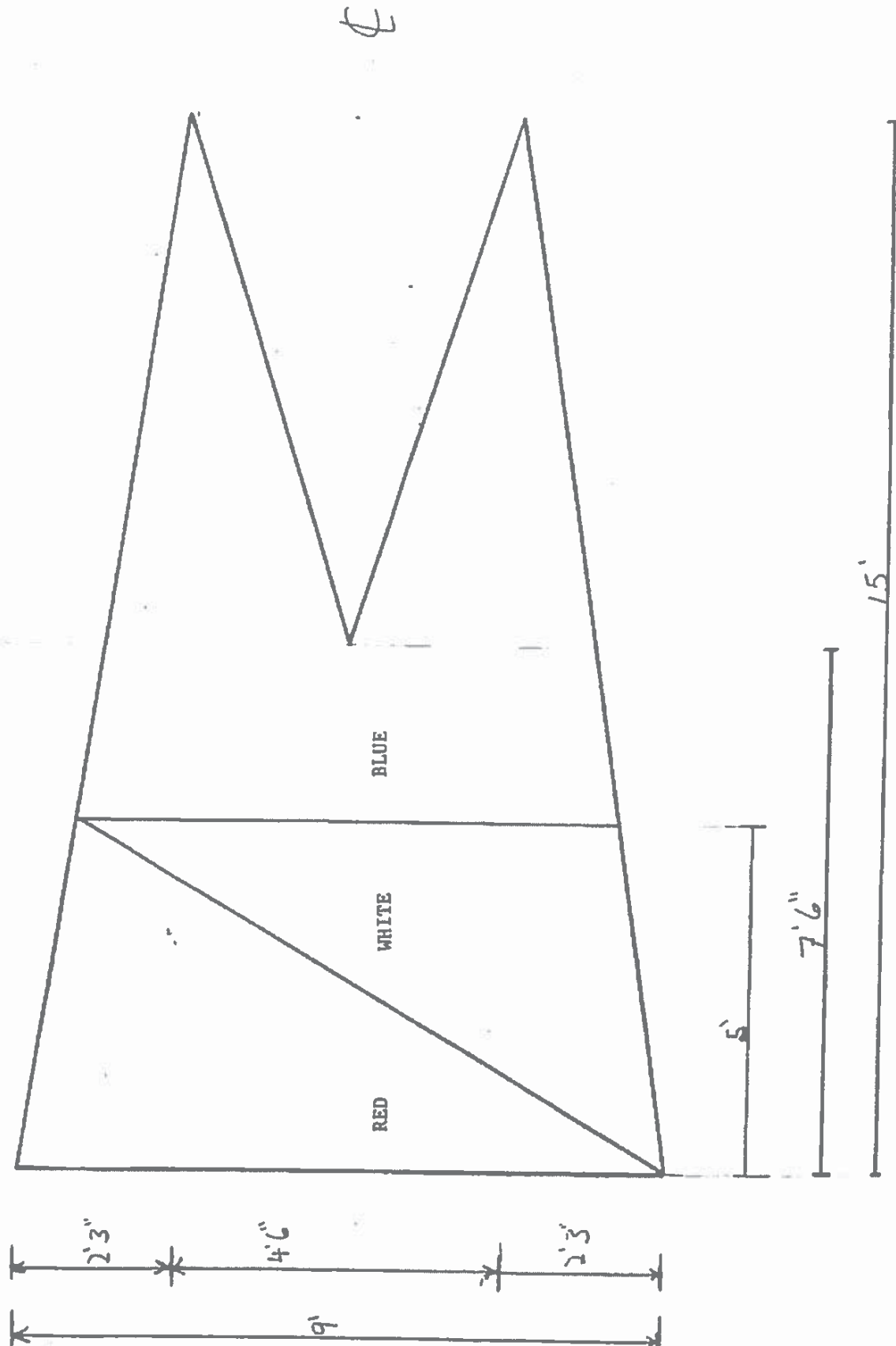
Drawn By: Matt Siemers Scale: 1/4 inch
Design based on historic chart
Project Title: Commercial Signal Flags
Drawing Title: West Surge
Drawing Number: B.2.
Responsible Officer: Scott Watson, ISO-HDC



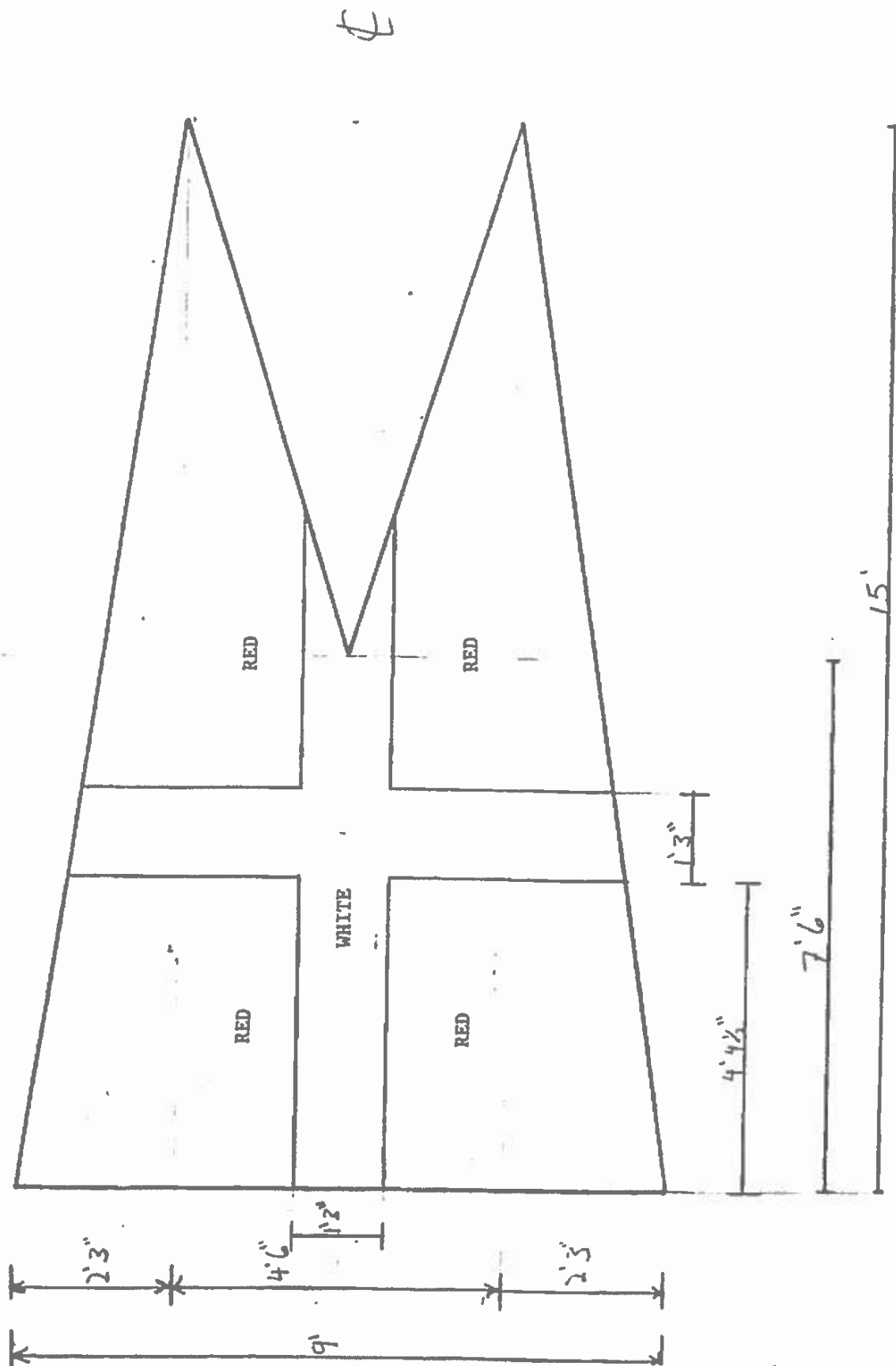
Drawn By: Matt Siemers Scale: 1/4 inch
Design based on historic chart
Project Title: Commercial Signal Flags
Drawing Title: *W.H. Creighton Burgee*
Drawing Number: 13.3.
Responsible Officer: Scott Watson, ISO-RDC



Drawn By: Matt Siemers Scale: 1/4 inch
Design based on historic chart
Project Title: Commercial Signal Flags
Drawing Title: Rudolph B. 1912
Drawing Number: 134.
Responsible Officer: Scott Watson, ISO-HDC

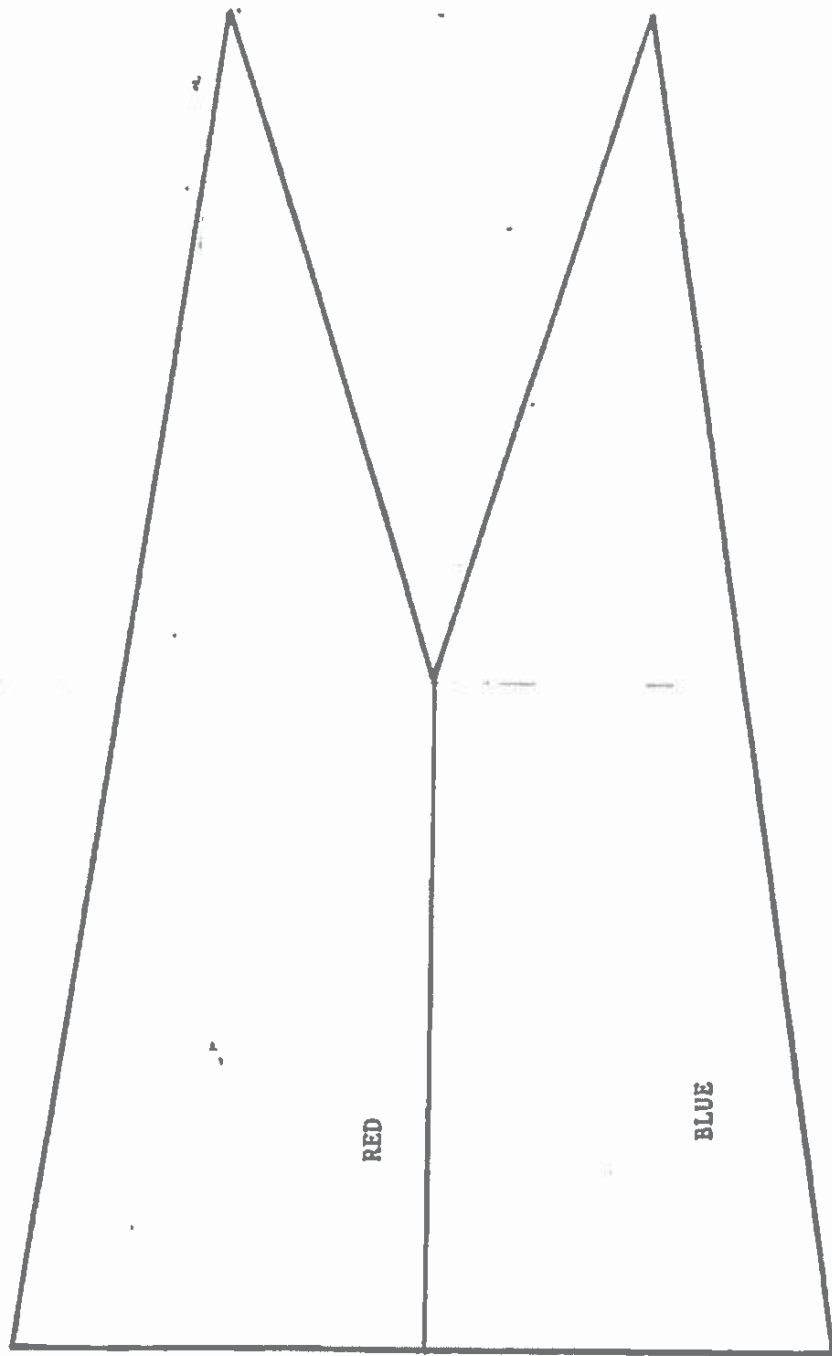
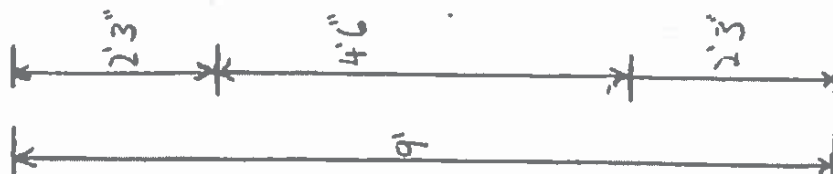


Drawn By: Matt Siemens Scale: 1 inch
Design based on historic chart
Project Title: Commercial Signal Flags
Drawing Title: S.F. Bars Burgee
Drawing Number: 3.5
Responsible Officer: Scott Watson, ISO-HDC



Drawn By: Matt Siemers Scale: 1/4 inch
Design based on historic chart
Project Title: Commercial Signal Flags
Drawing Title: Oxley & Co., Burje
Drawing Number: G.6.
Responsible Officer: Scott Watson, ISO-HDC-

4

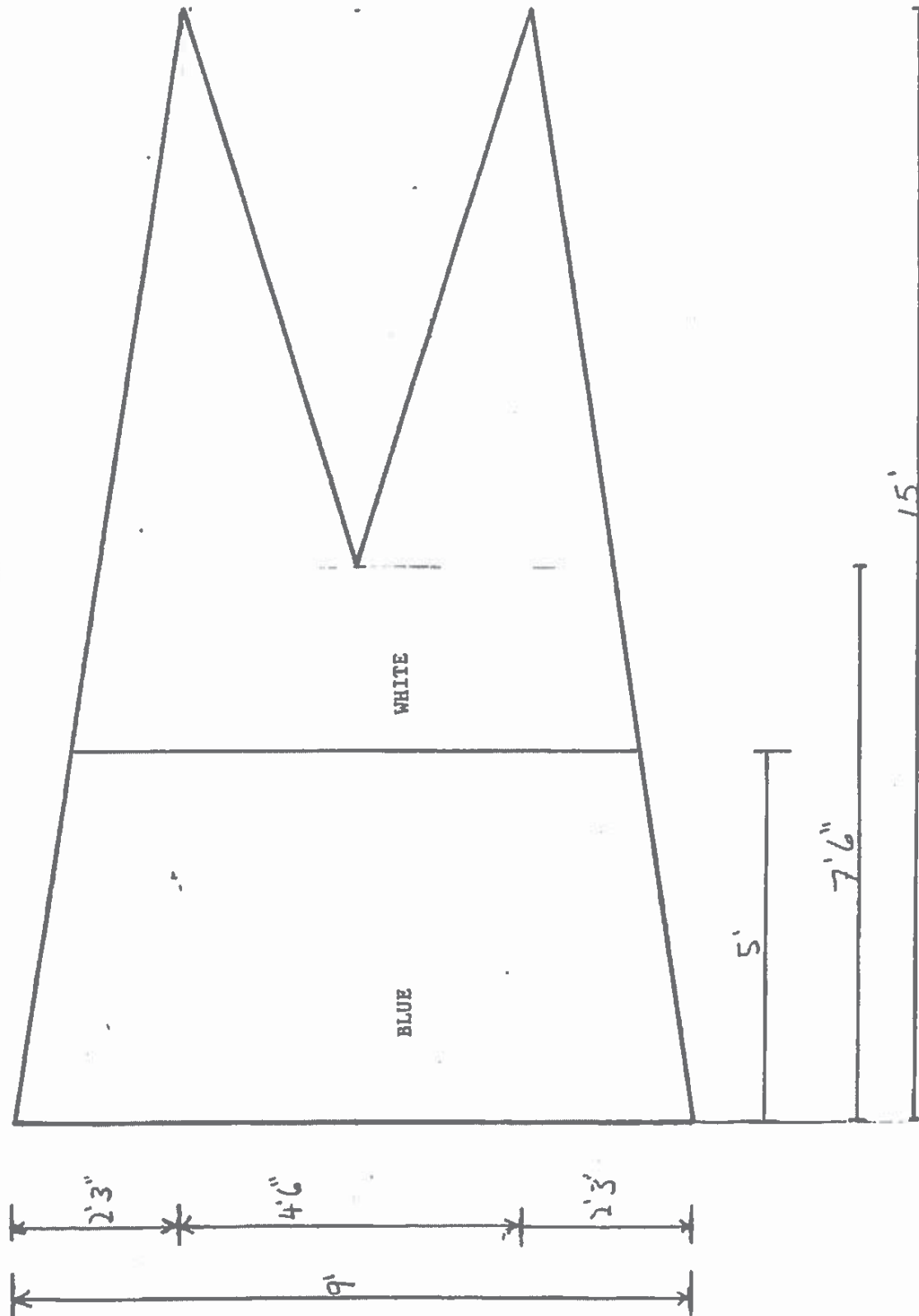


4

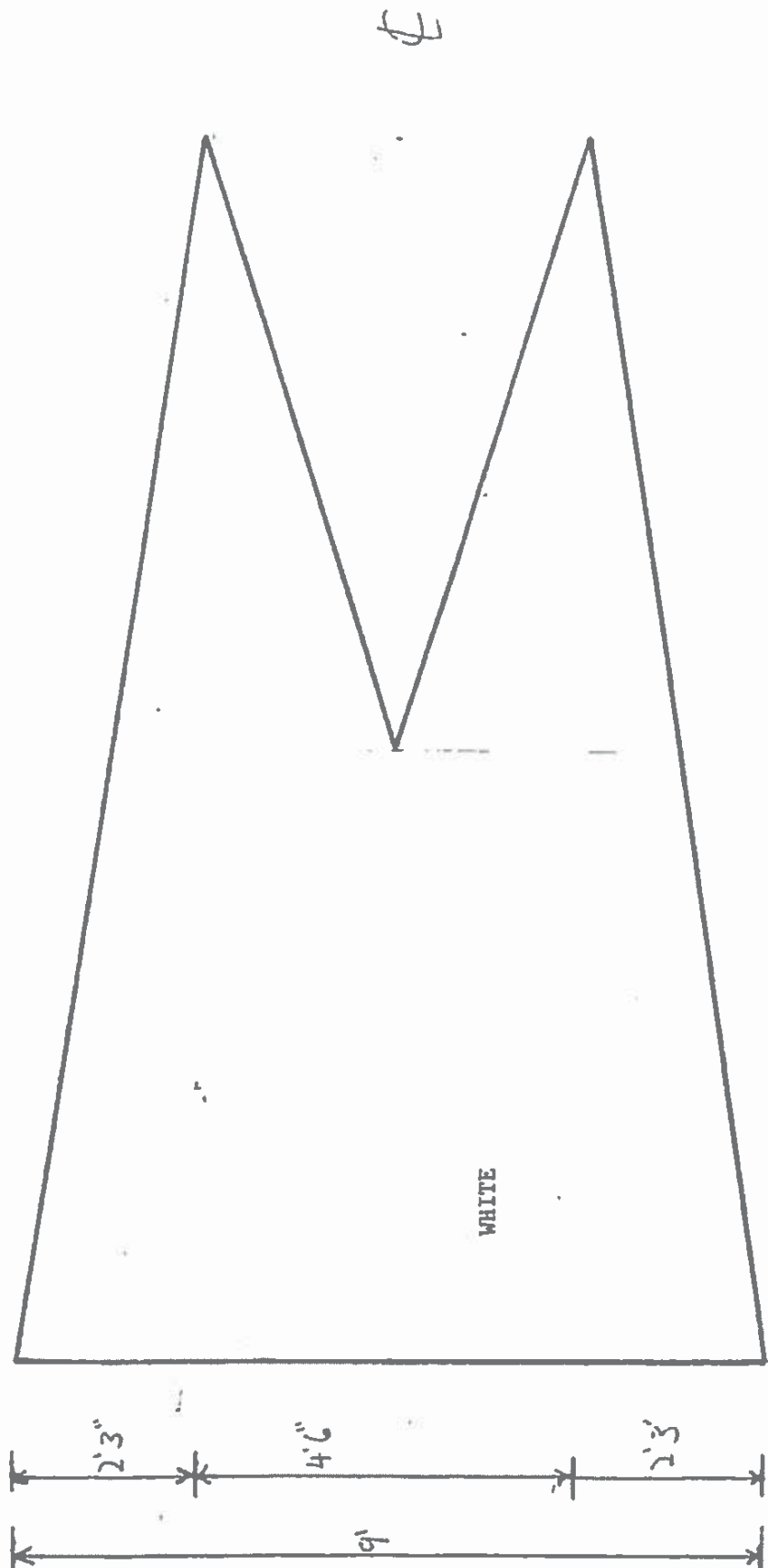
7'6"

15'

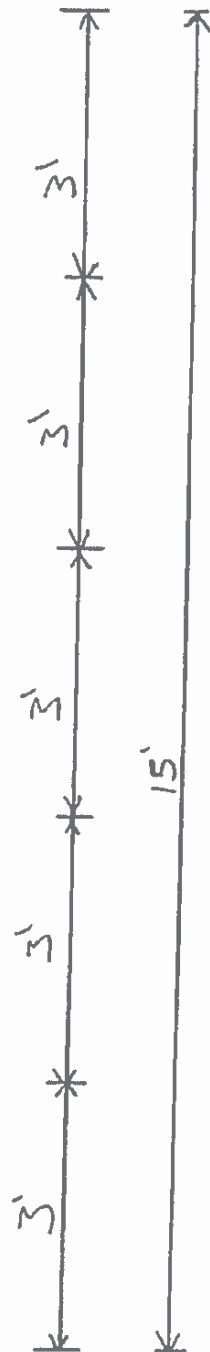
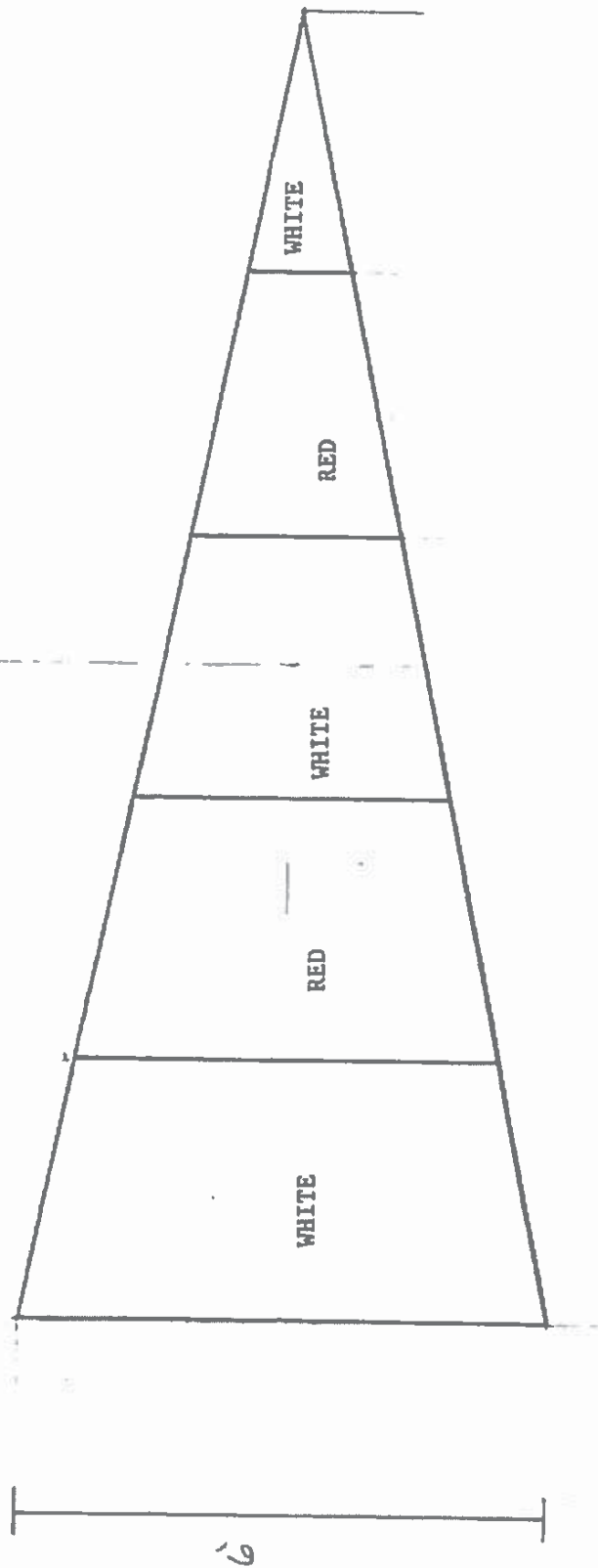
Drawn By: Matt Siemers Scale: 1/4 inch
Design based on historic chart.
Project Title: Commercial Signal Flags
Drawing Title: Full Bargee
Drawing Number: B.7
Responsible Officer: Scott Watson, ISO-HDC



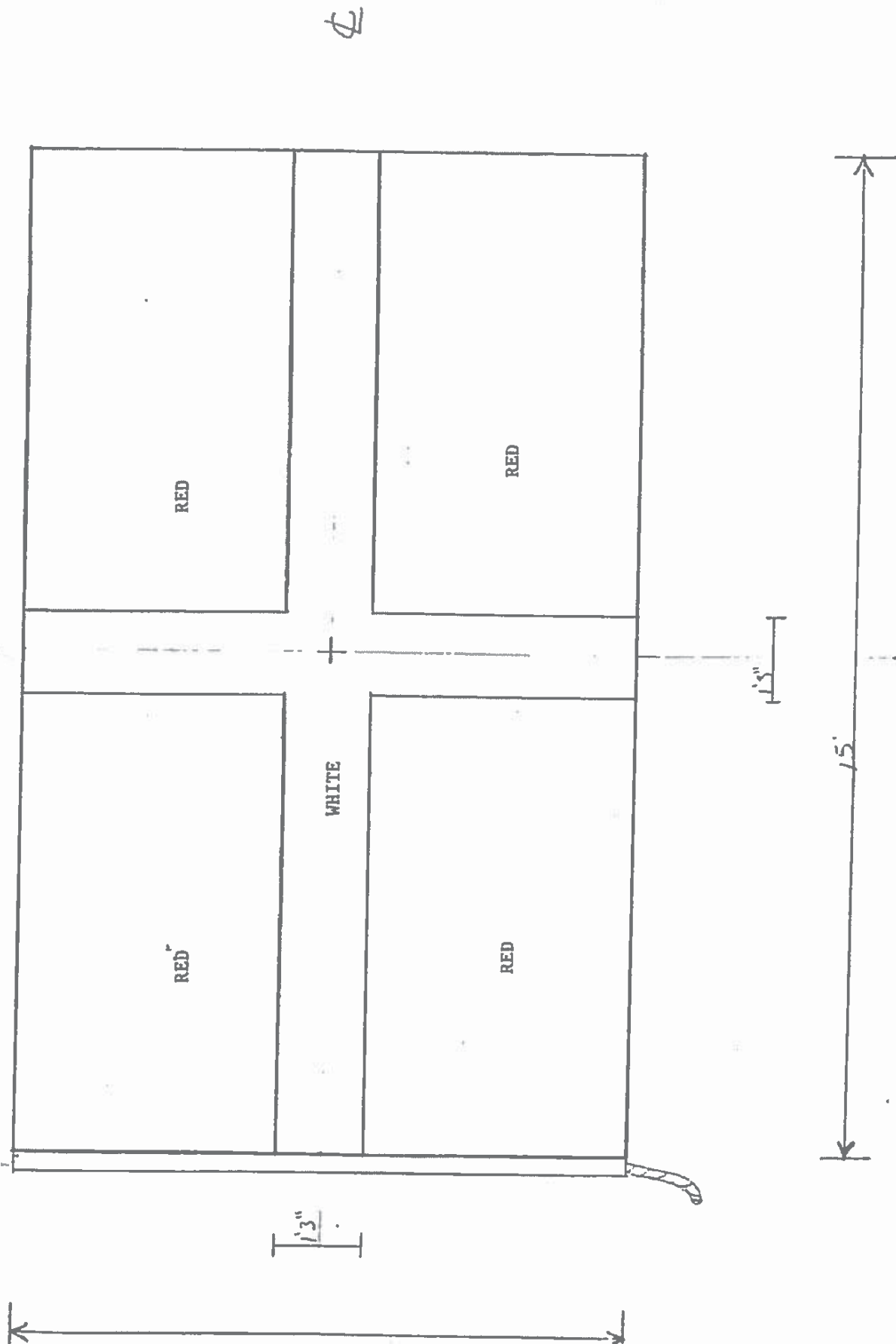
Drawn By: Matt Siemers Scale: 1/2 inch
Design based on historic chart
Project Title: Commercial Signal Flags
Drawing Title: C.H. Starr & Co., BURGEE
Drawing Number: B.8
Responsible Officer: Scott Watson, ISO-HDC



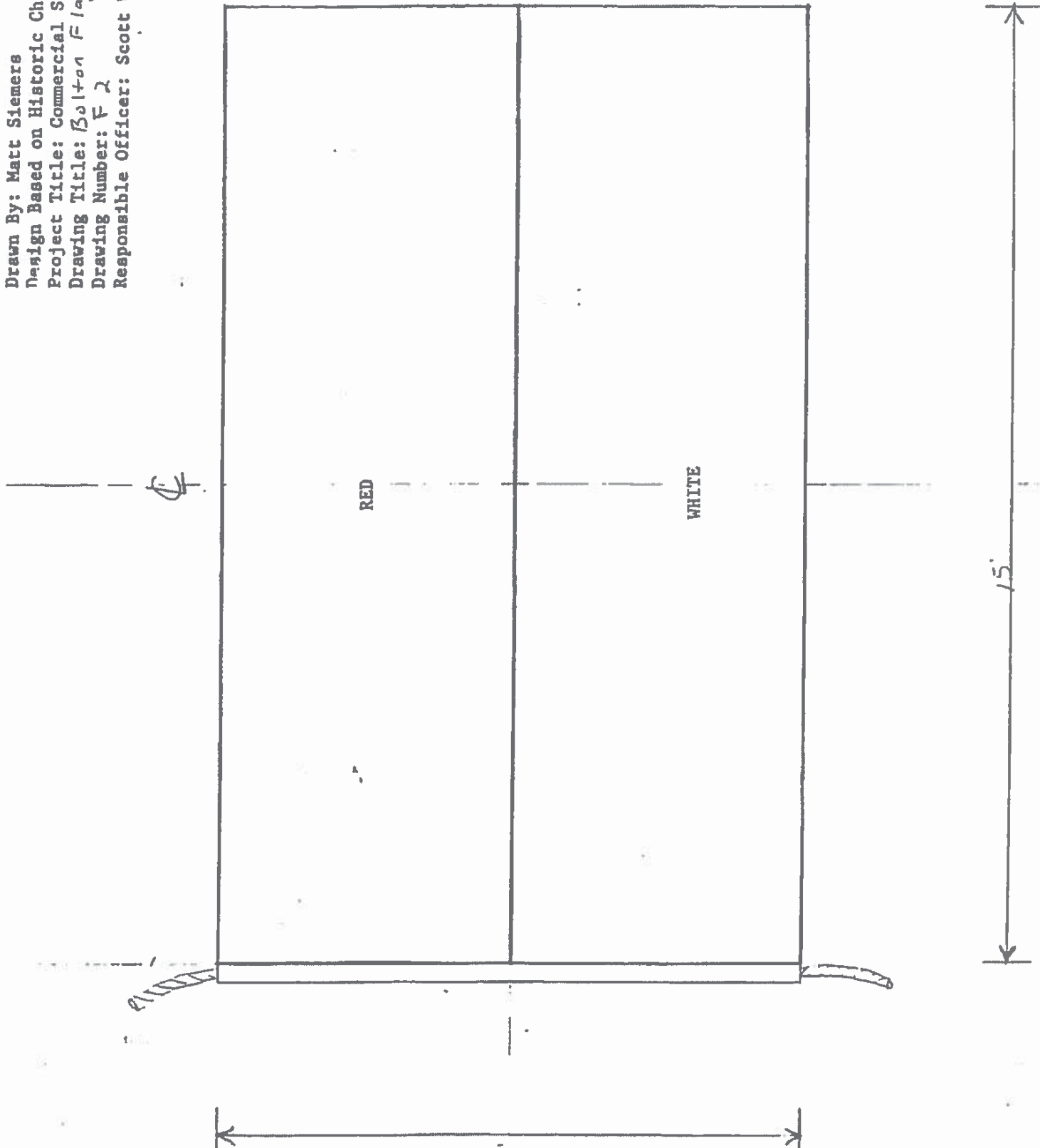
Drawn By: Matt Siemers Scale: 1/4 inch
Design Based on historic chart
Project title: Commercial Signal Flags
Drawing Title: Cronan Commercial Pennant
Drawing Number: CP 1
Responsible Officer: Scott Watson, ISO-HDC



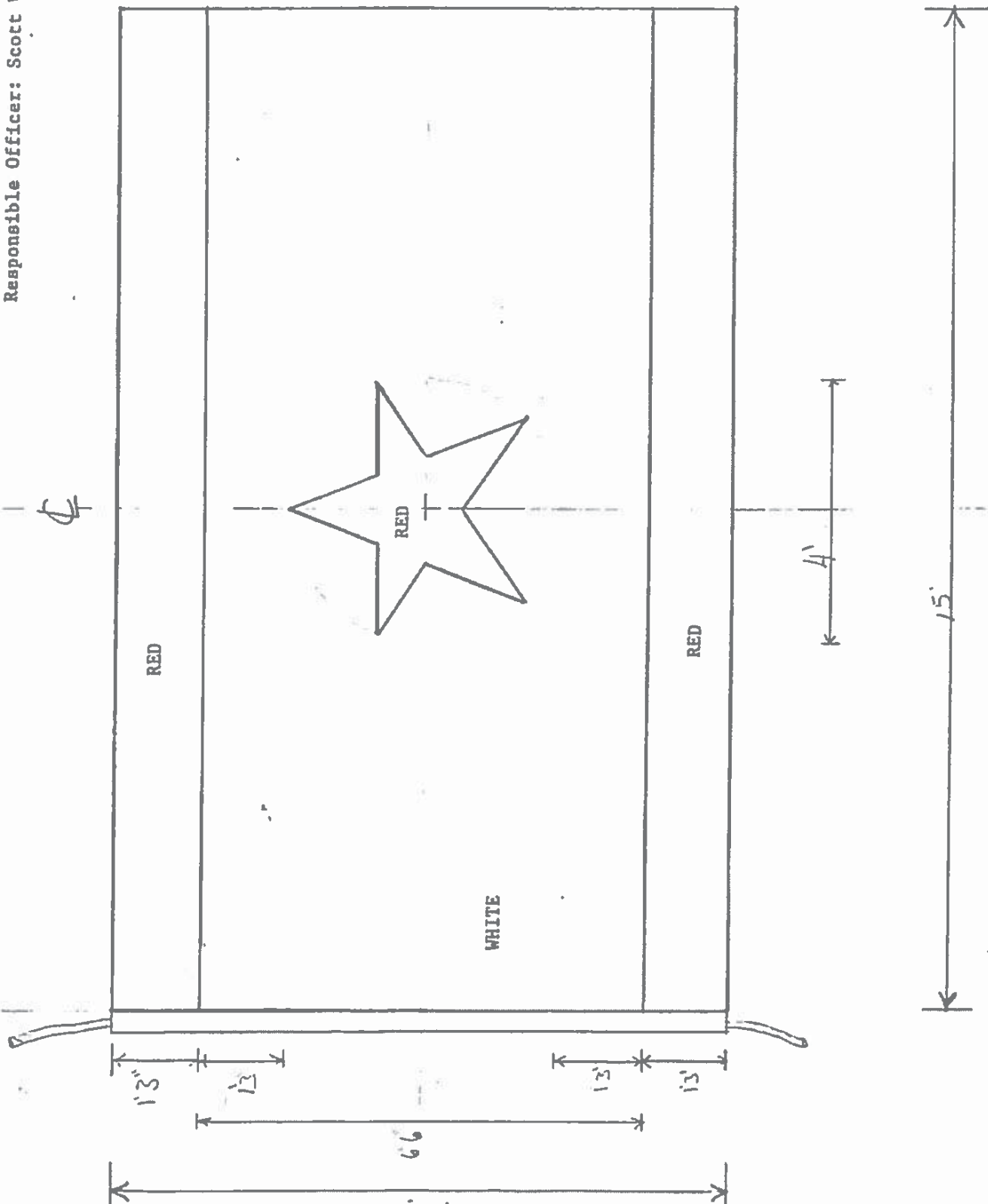
Drawn by: Matt Stimers Scale: 1/2 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: *Tobin Flag*
Drawing Number: F1
Responsible Officer: Scott Watson, ISO-HDC



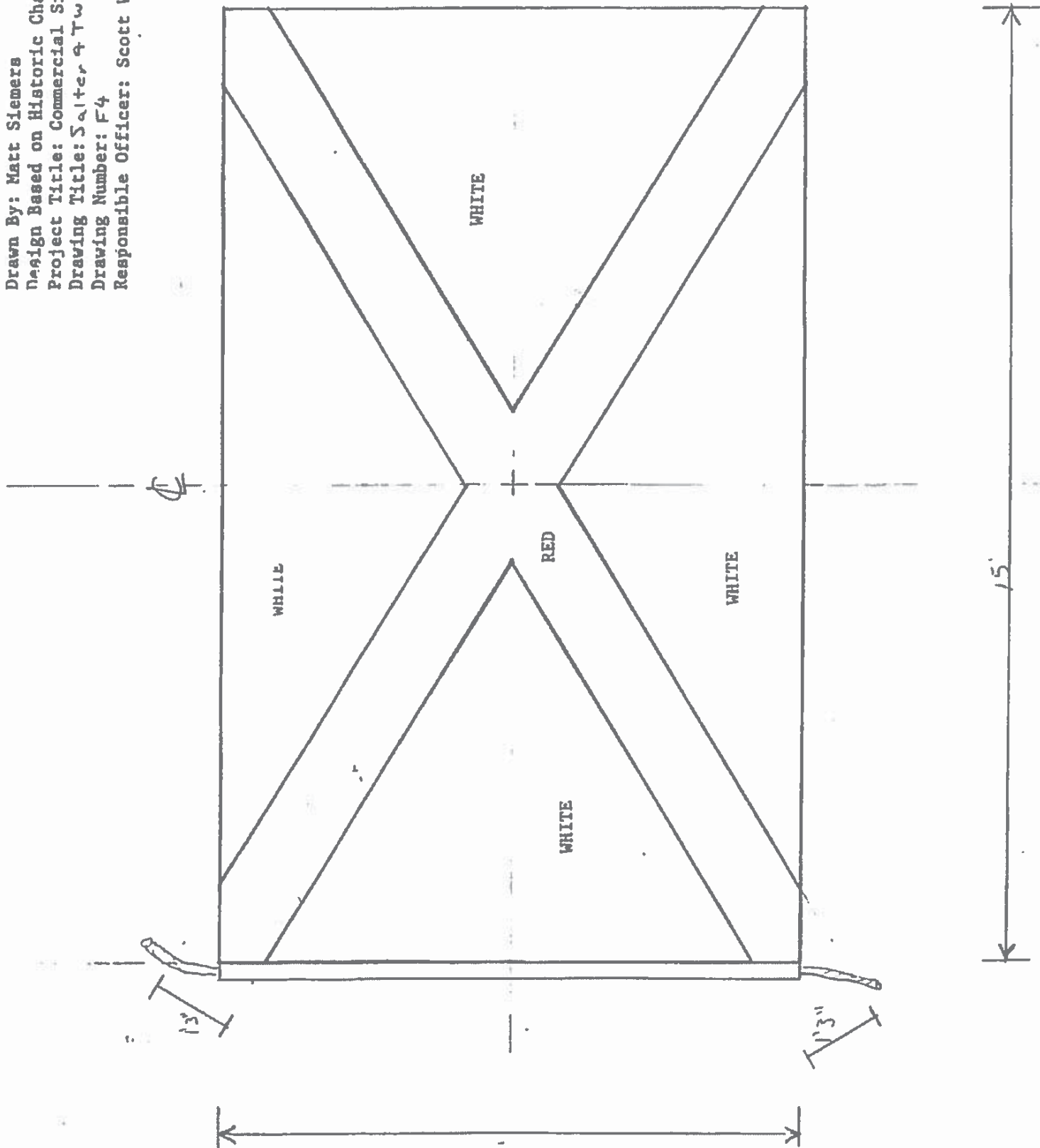
Drawn By: Matt Siemers Scale: 1/4 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: Bolton Flag
Drawing Number: F 2
Responsible Officer: Scott Watson, ISO-HDC



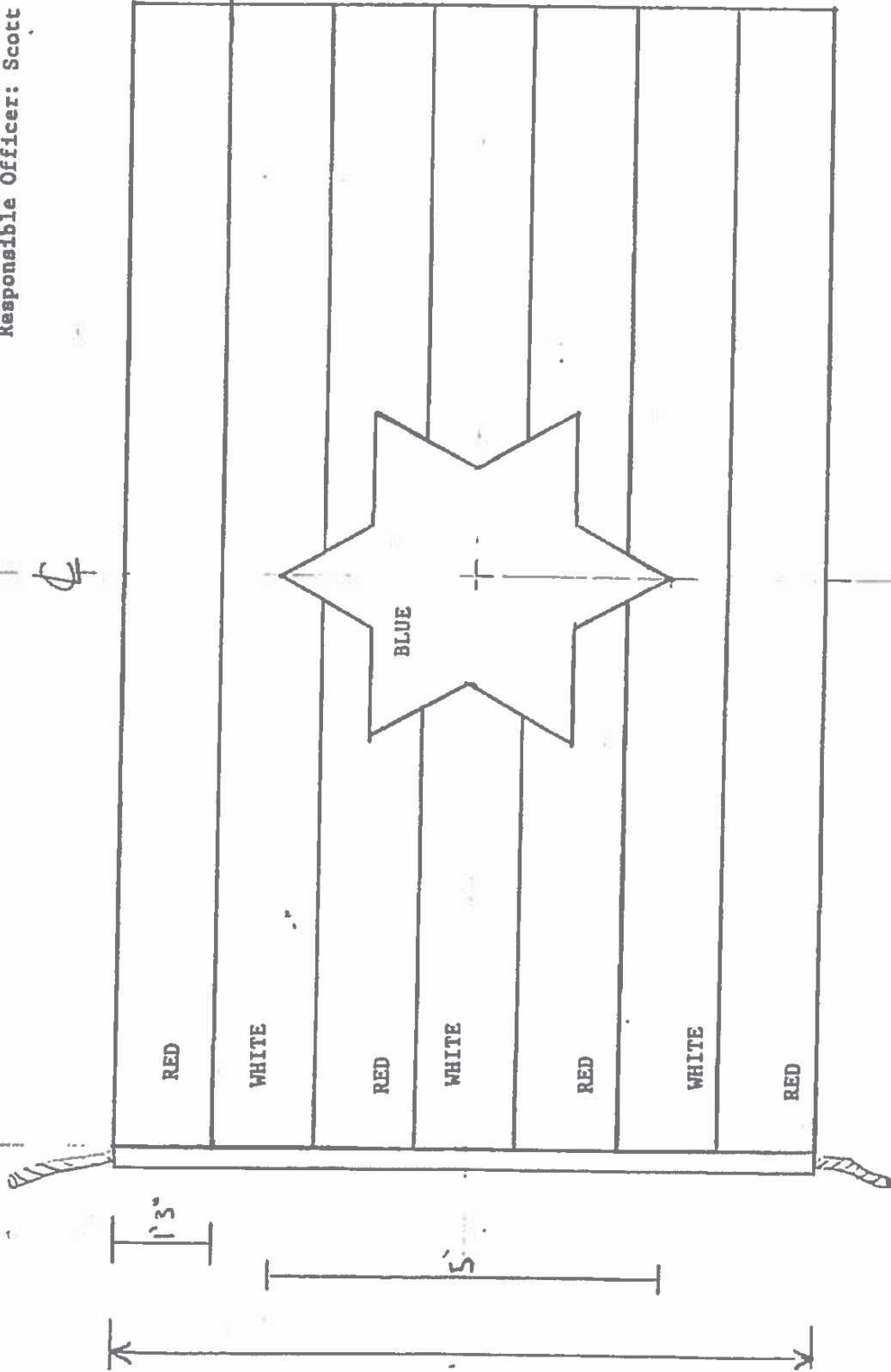
DRAWN BY: RUTH CLEMENS Scale: 1 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: T.C. Kinnear & Co., Flag
Drawing Number: F.3
Responsible Officer: Scott Watson, ISO-HDC



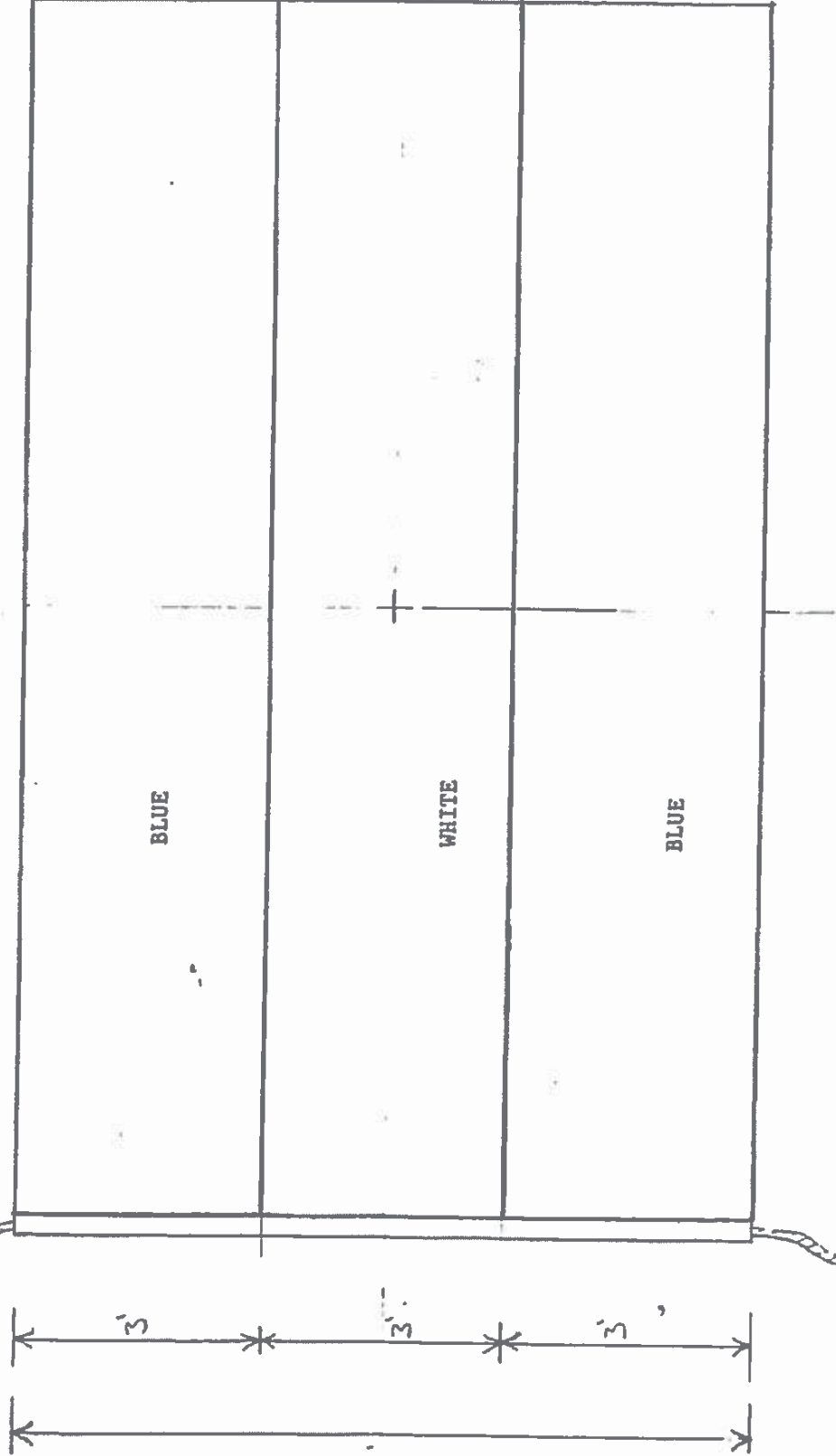
Drawn By: Matt Siemers Scale: 1/2 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: *Salter & Twining Flag*
Drawing Number: F4
Responsible Officer: Scott Watson, ISO-HDC



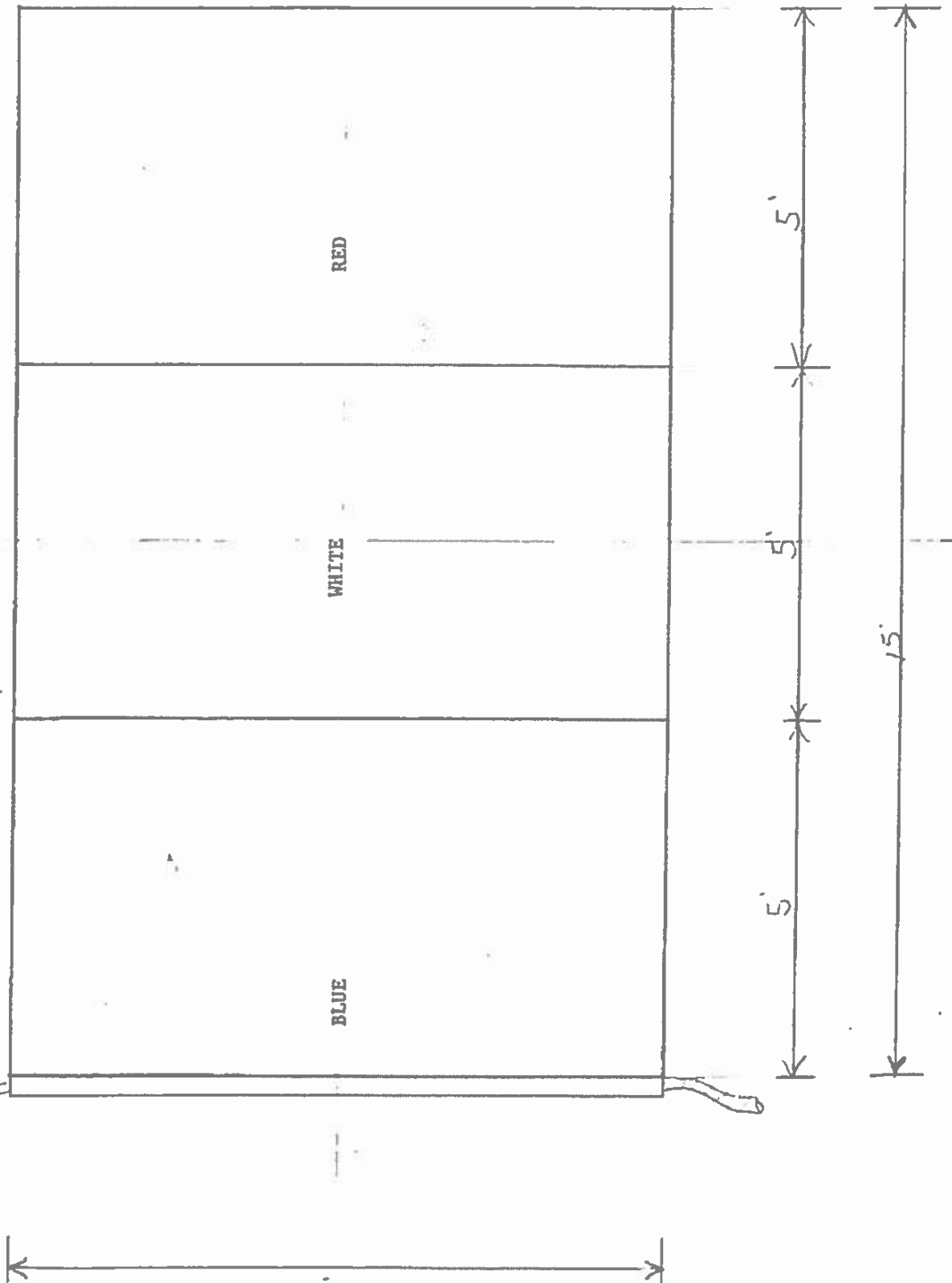
Drawn By: Matt Siemers Scale: 1/4 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: Young & Hart Flag
Drawing Number: F. 5
Responsible Officer: Scott Watson, ISO-HDC



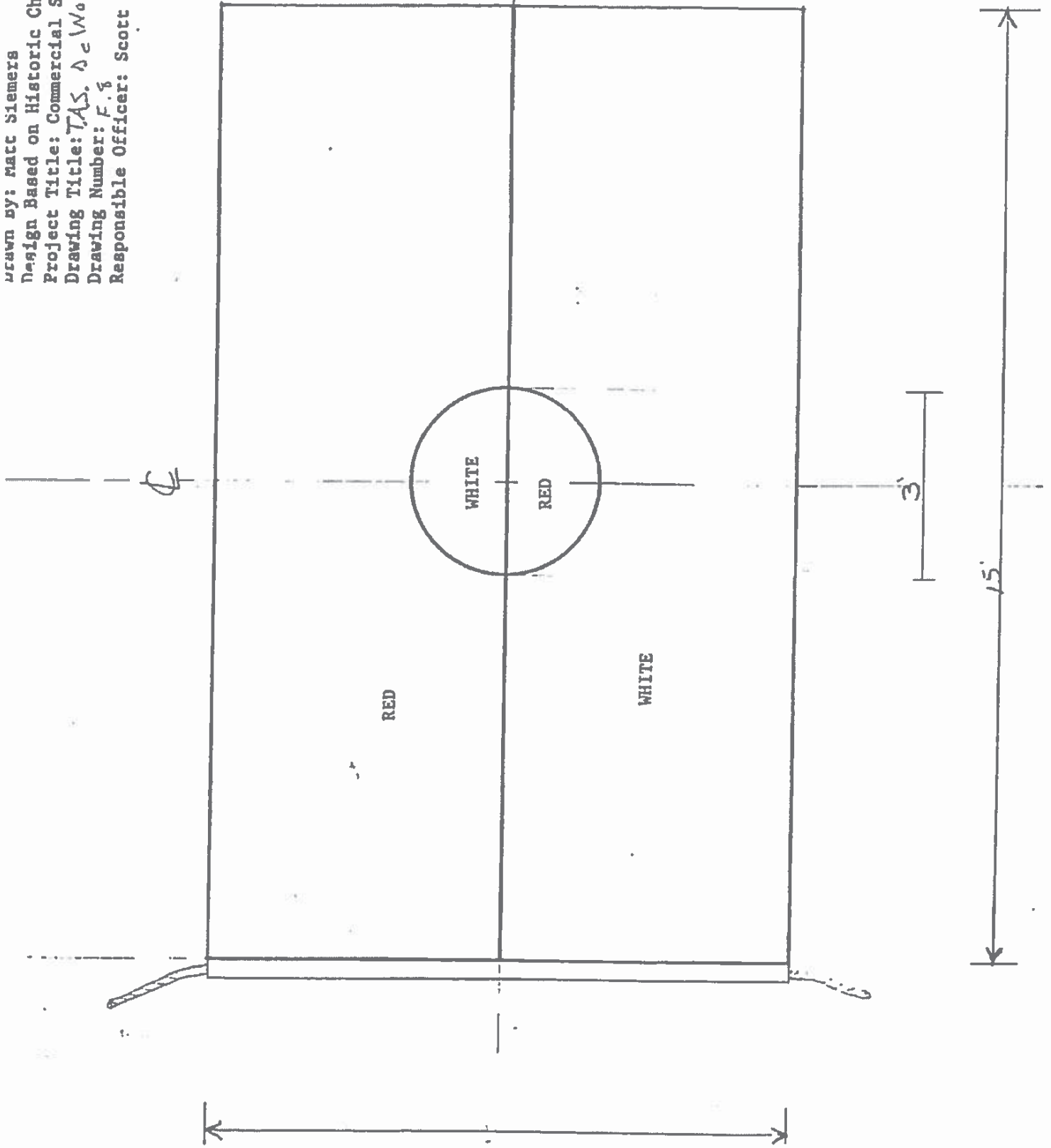
Drawn By: Matt Siemers Scale: 1 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: Hamilton Flag
Drawing Number: F 6
Responsible Officer: Scott Watson, ISO-HDC



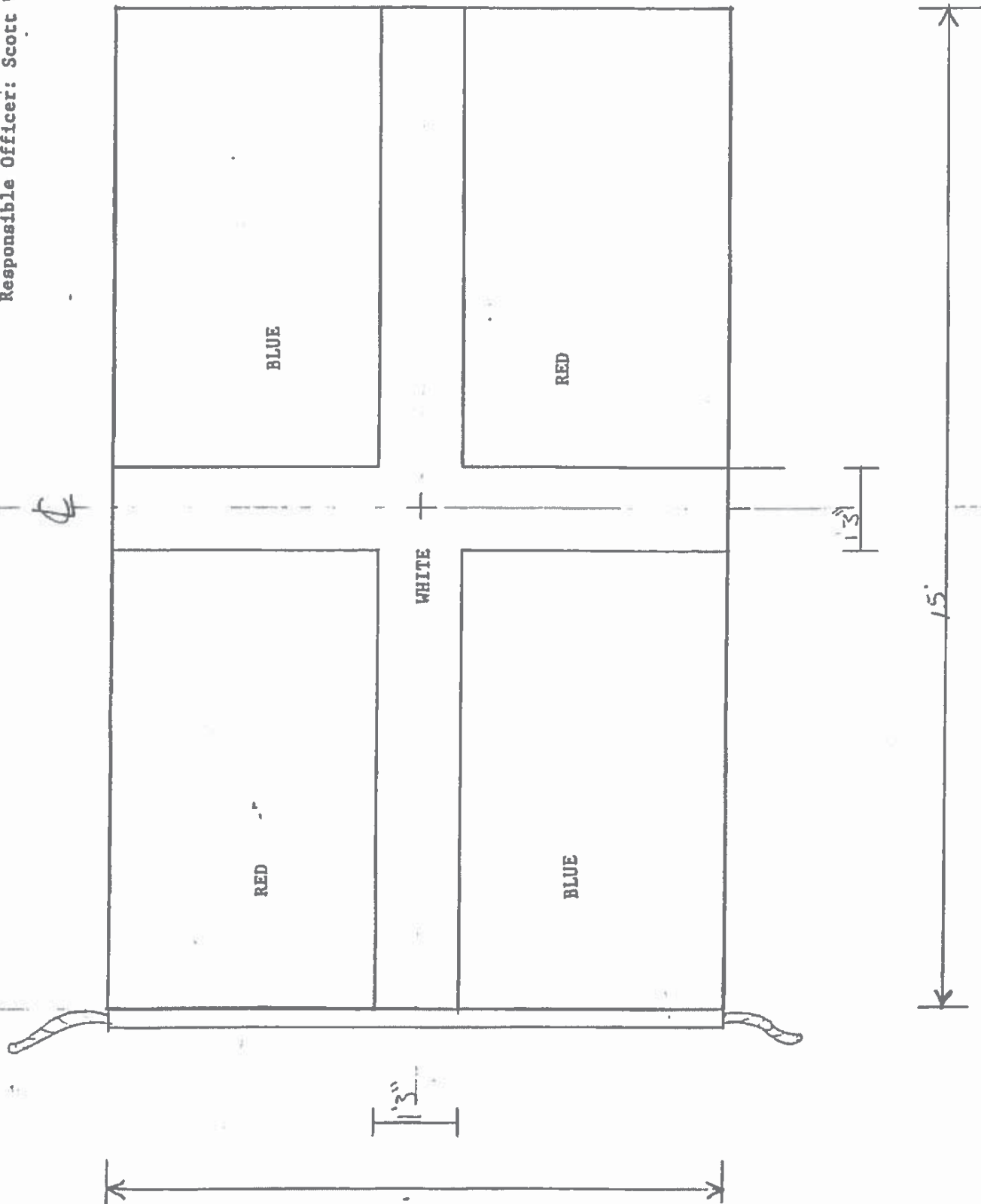
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: *Cop Hunter Flag*
Drawing Number: *F. 7*
Responsible Officer: Scott Watson, ISO-HDC



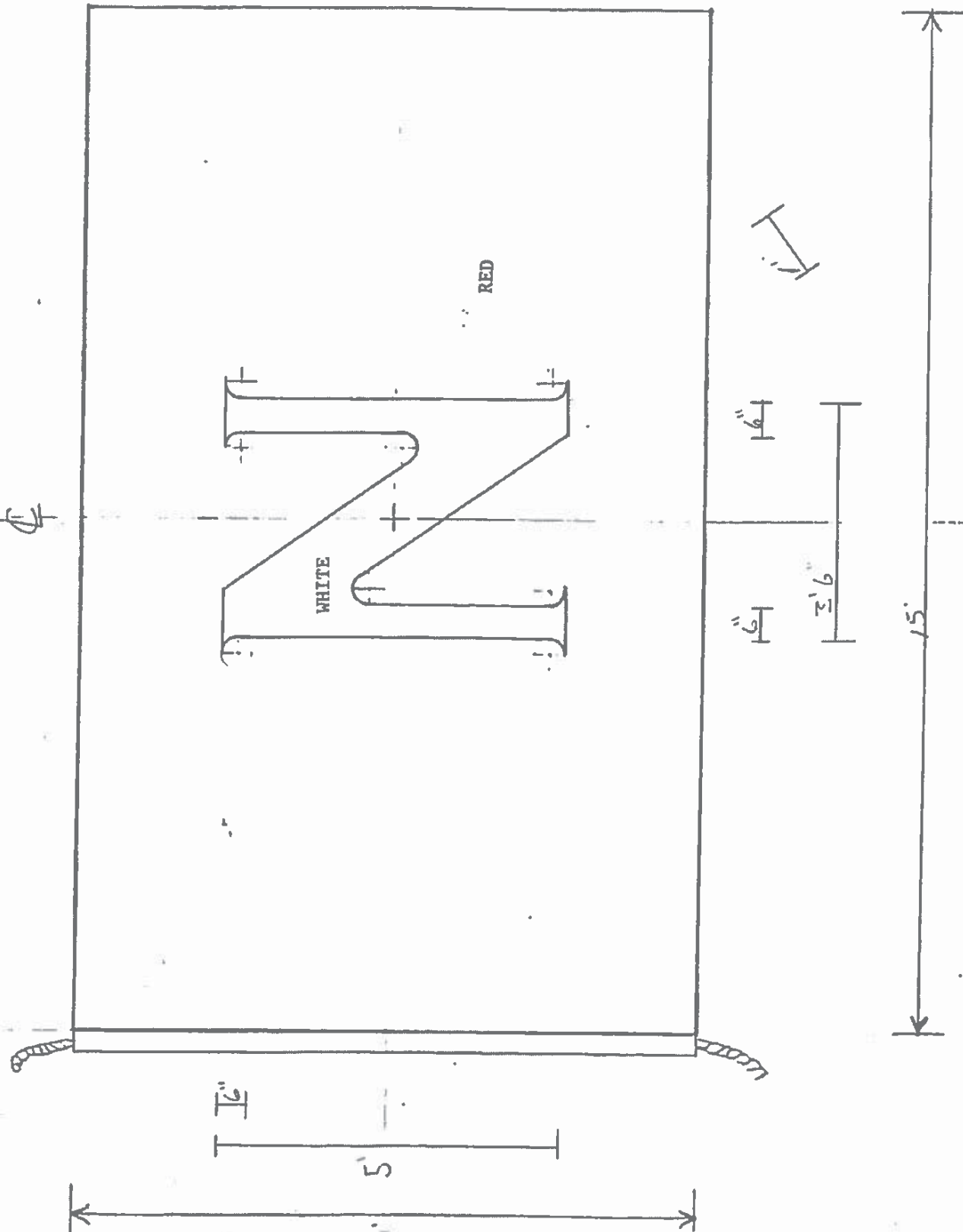
Drawn by: Matt Siemens Scale: 1/2 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: TAS. Dec Wofle + Son Flag
Drawing Number: F. 8
Responsible Officer: Scott Watson, ISO-HDC



Drawn by: Matt Siemens Scale: 1/4 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: G.C. Harvey Flag
Drawing Number: F.9
Responsible Officer: Scott Watson, ISO-HDC

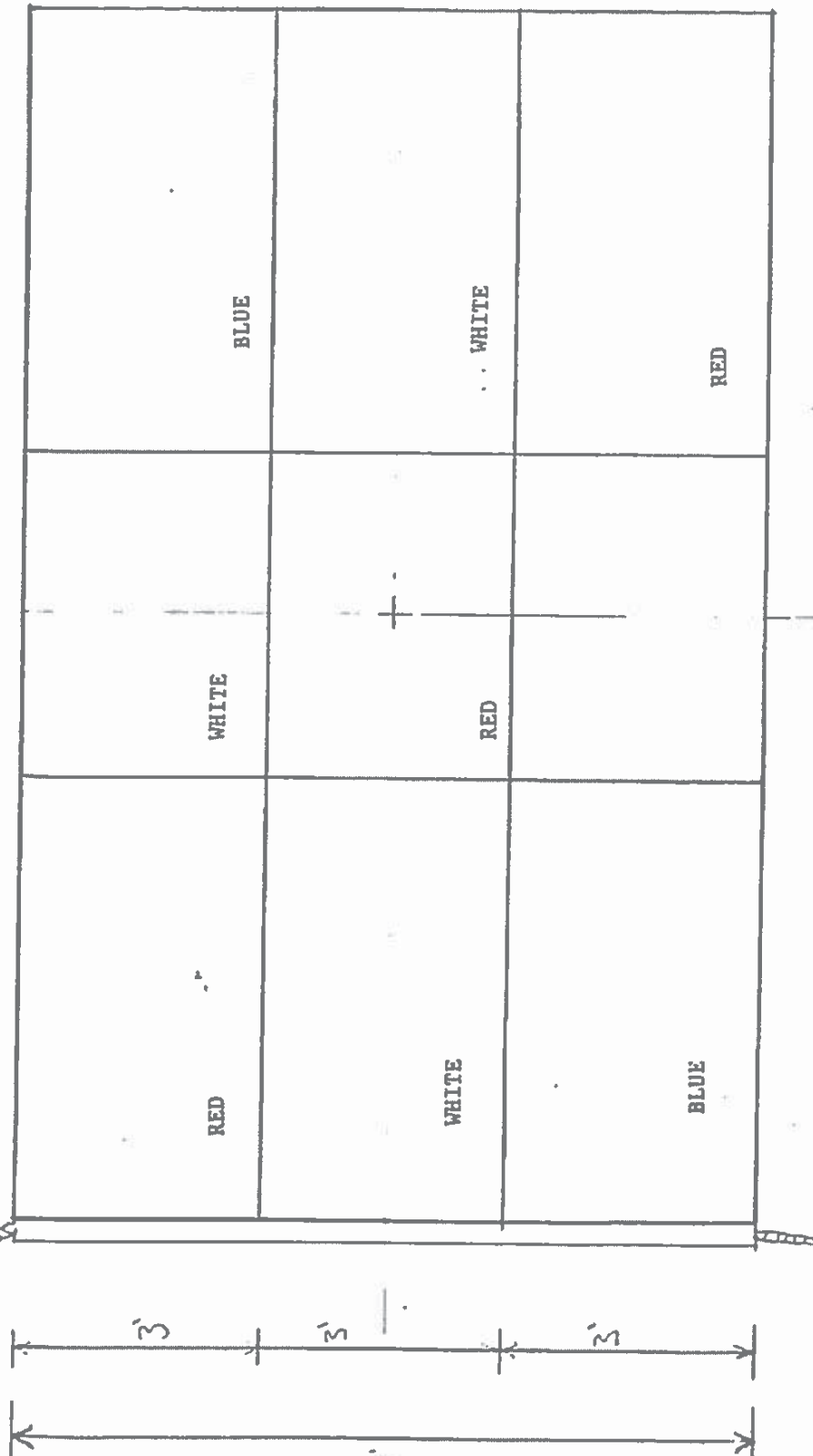


Drawn By: Matt Siemens Scale: 1/2 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: NO 612 F.I.
Drawing Number: F 10
Responsible Officer: Scott Watson, ISO-HDC



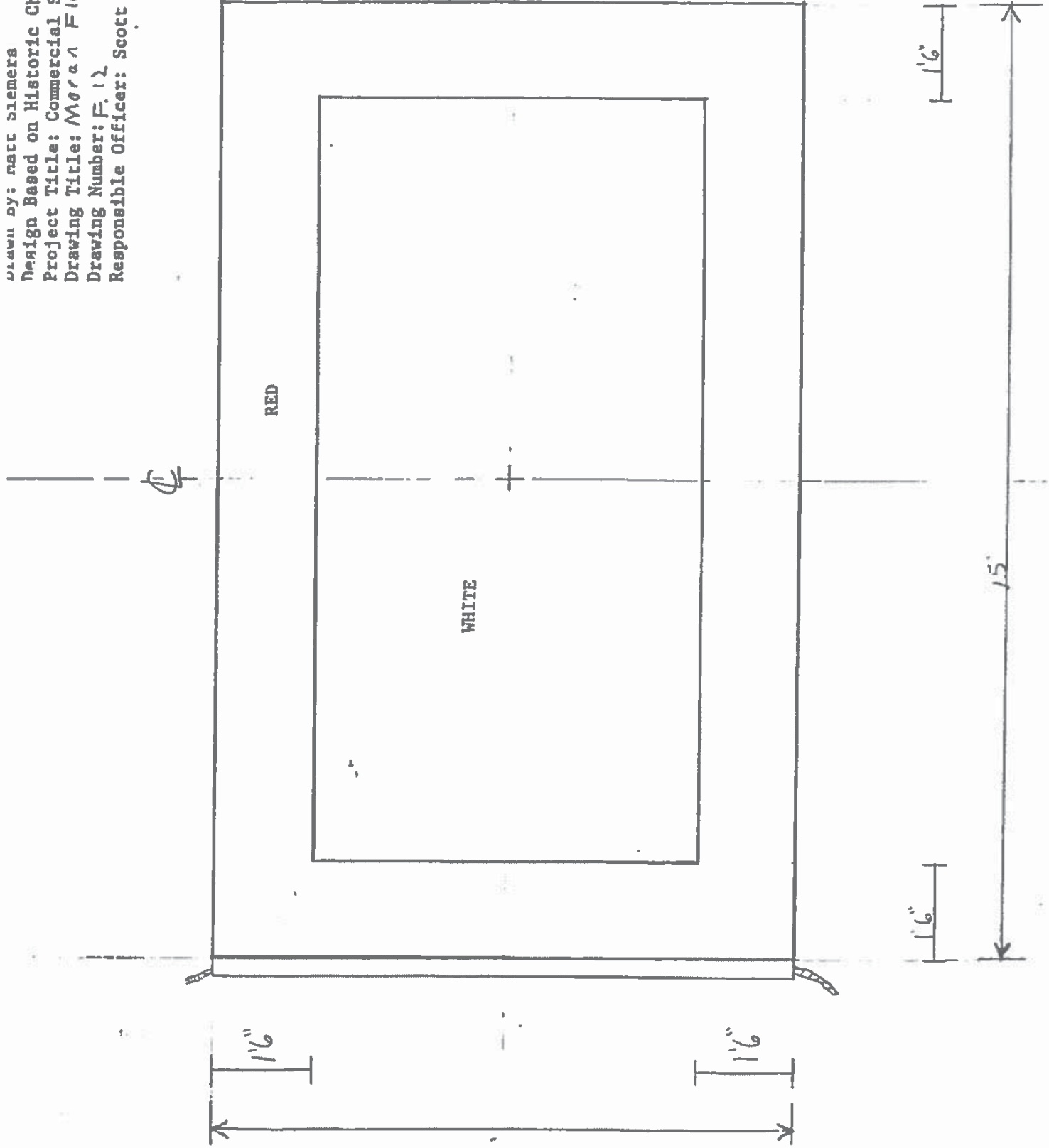
Design Based on Historic Chart
 Project Title: Commercial Signal Flags
 Drawing Title: B.W.I.E.R. & Co. Flag
 Drawing Number: F 11
 Responsible Officer: Scott Watson, ISO-HBC

Scale: 1 inch



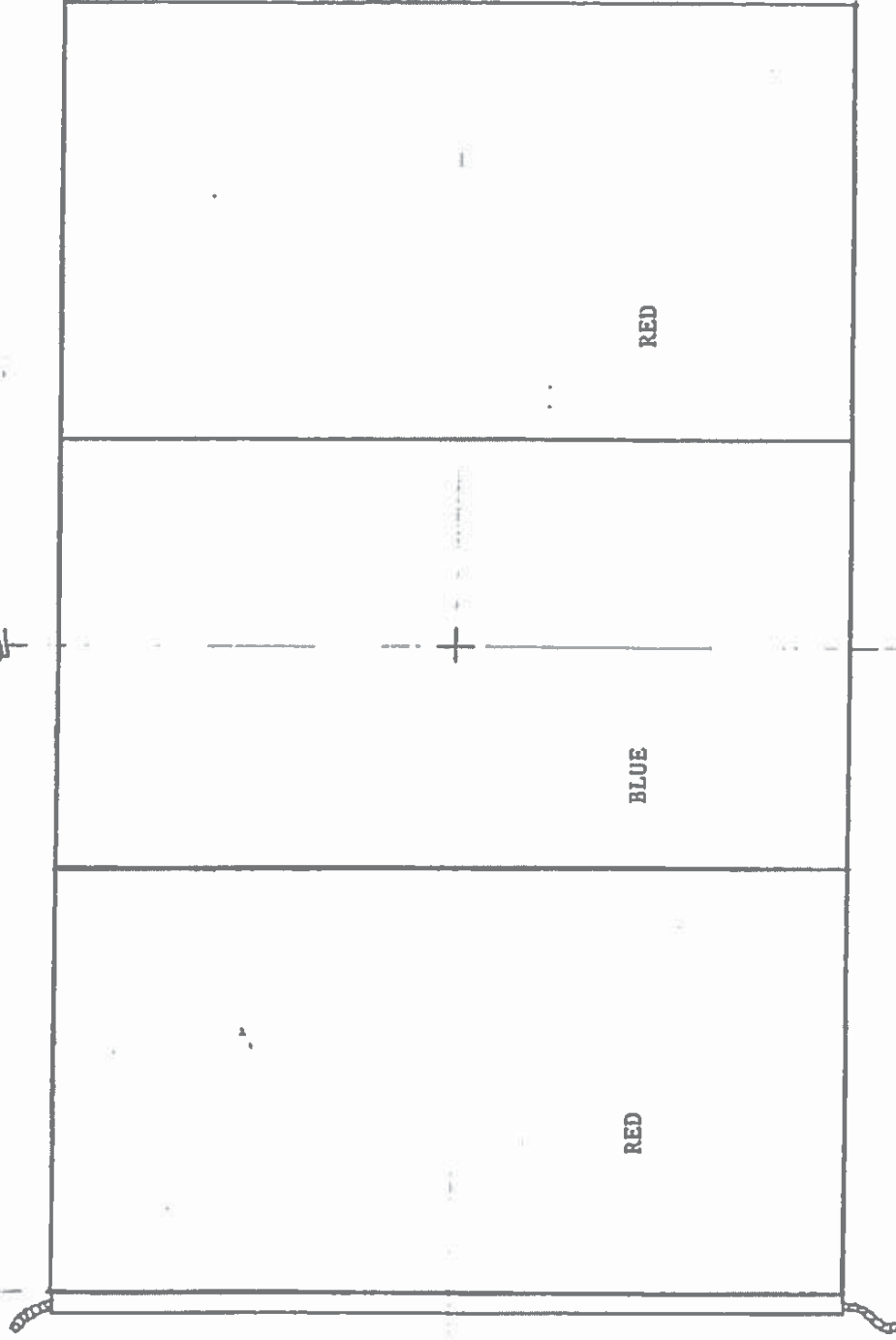
4

Drawn by: Matt Blumens
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: MORA 1 FIG 3
Drawing Number: F. 12
Responsible Officer: Scott Watson, ISO-HBC



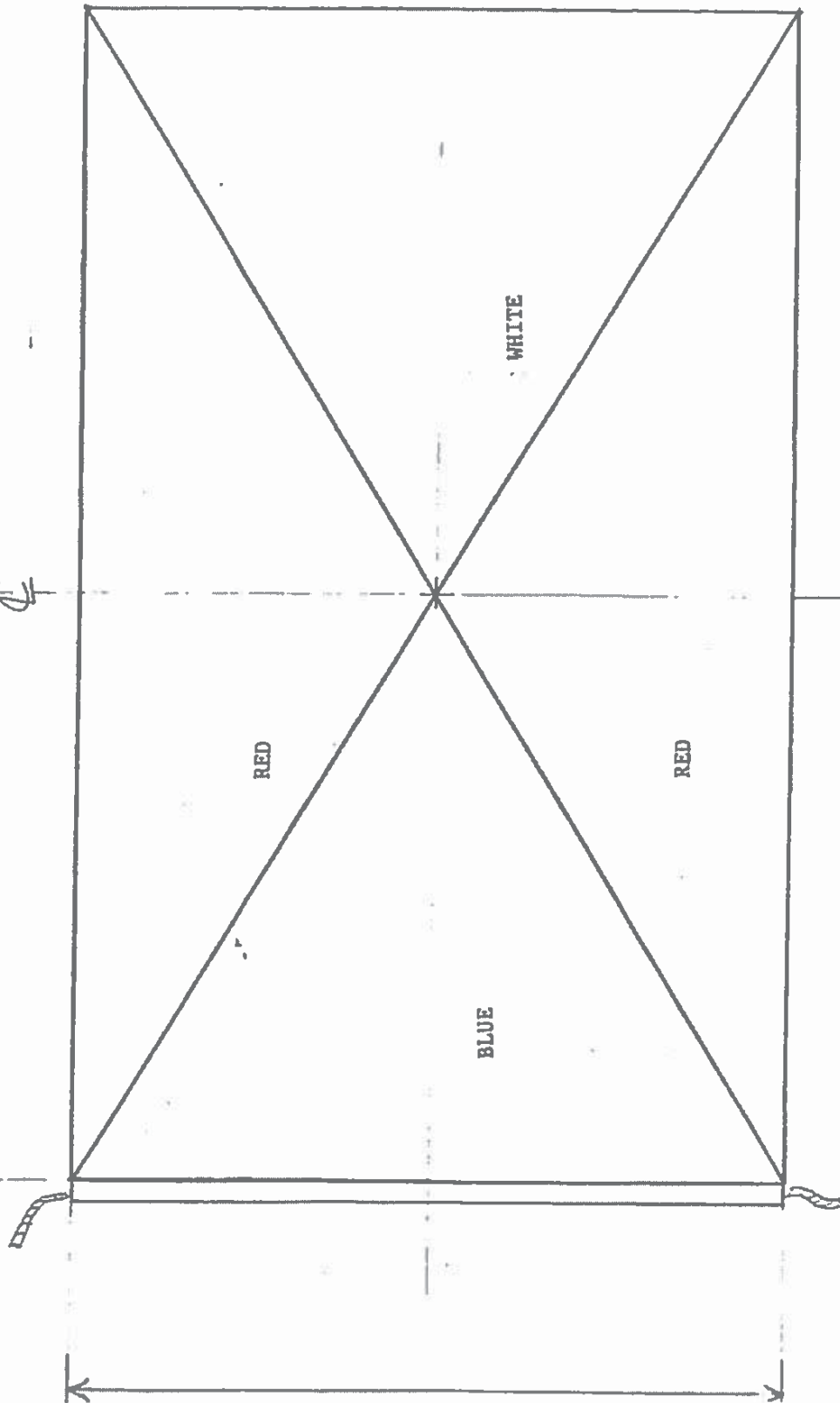
4

Drawn by: Matt Siemens Scale: 1/4 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: A Scott Flag
Drawing Number: F13
Responsible Officer: Scott Watson, ISO-HDC

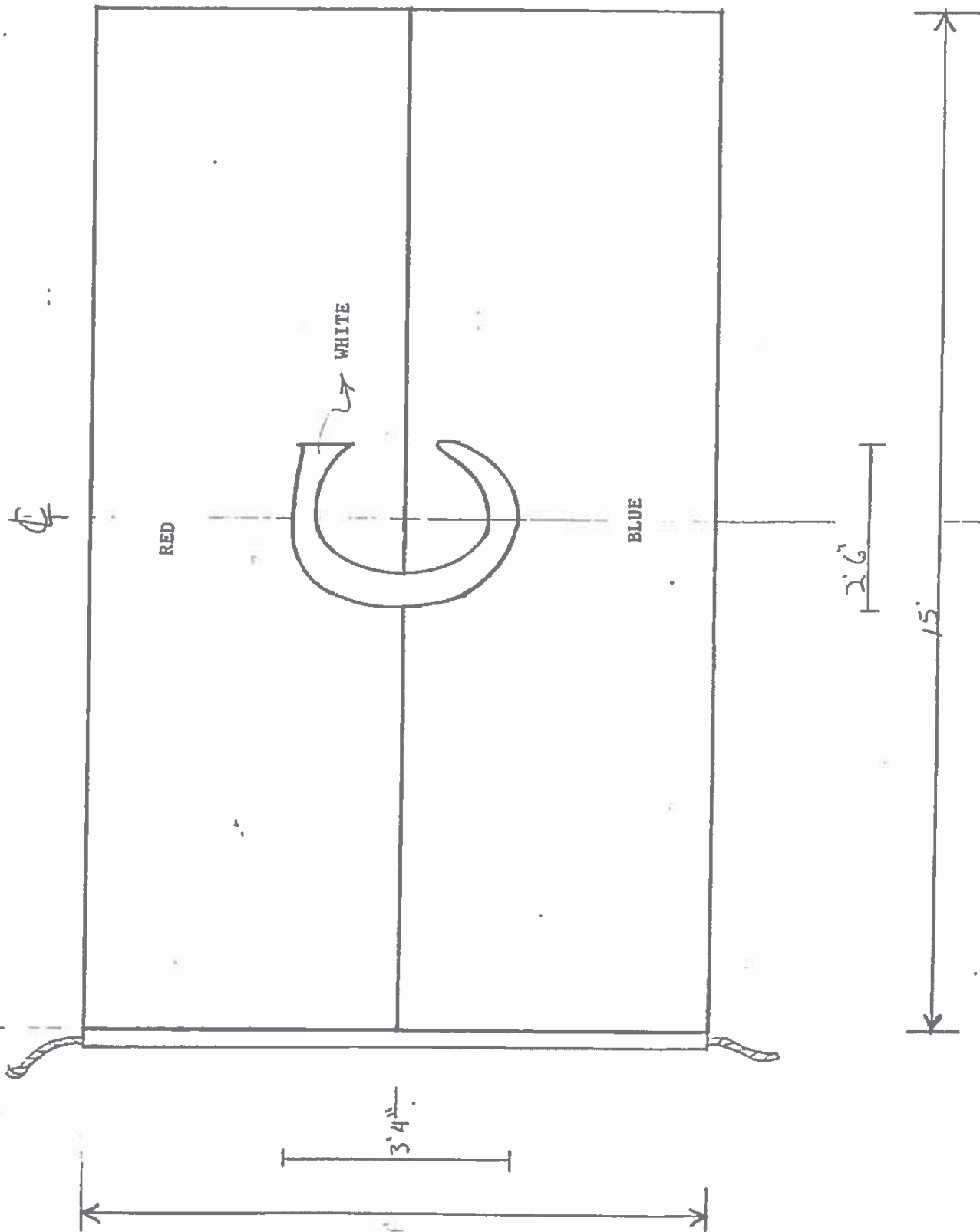


4

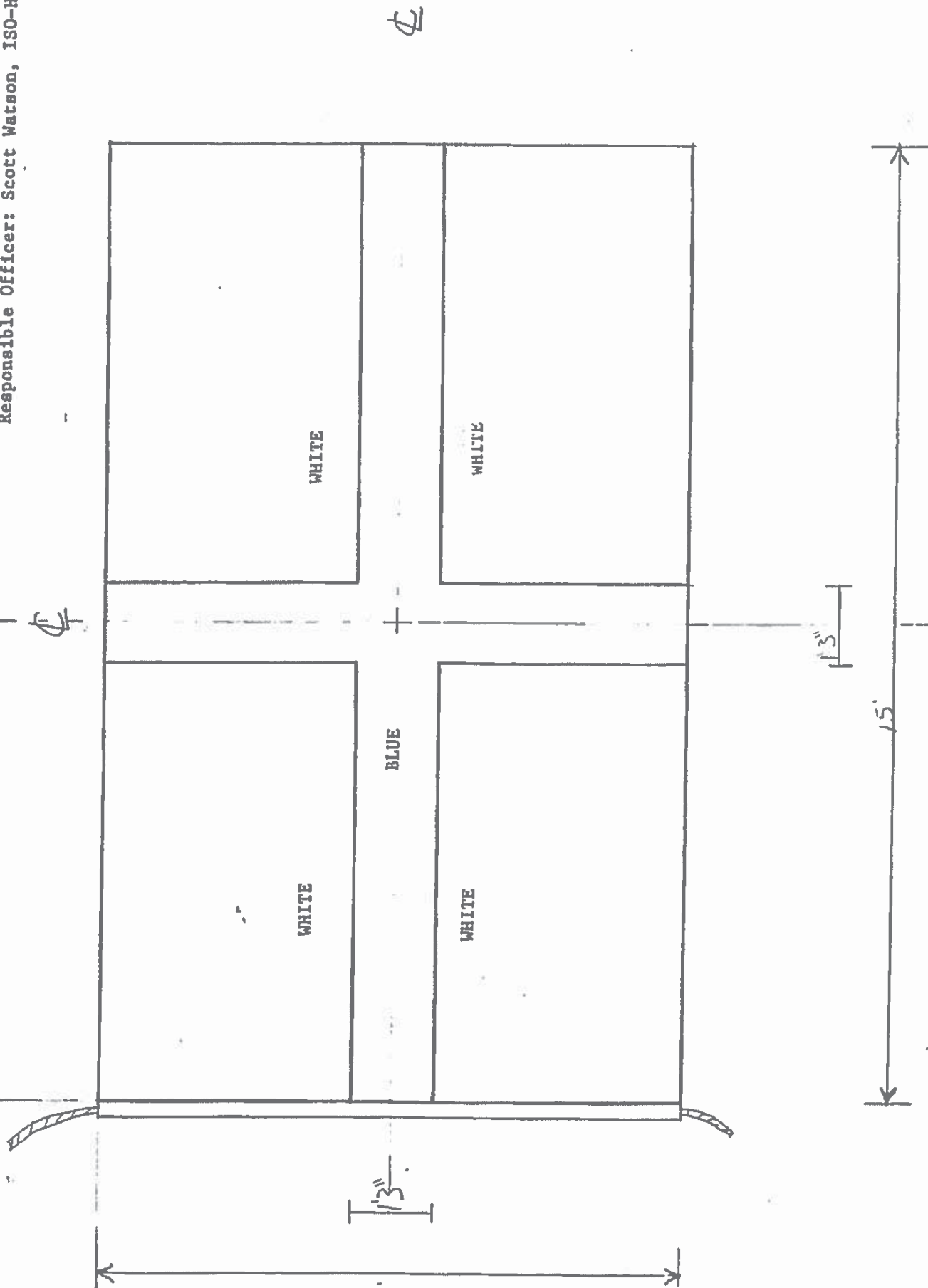
Drawn By: Matt Siemers Scale: 1 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: Duttons & Co., Flag
Drawing Number: F. 16
Responsible Officer: Scott Watson, ISO-HDC



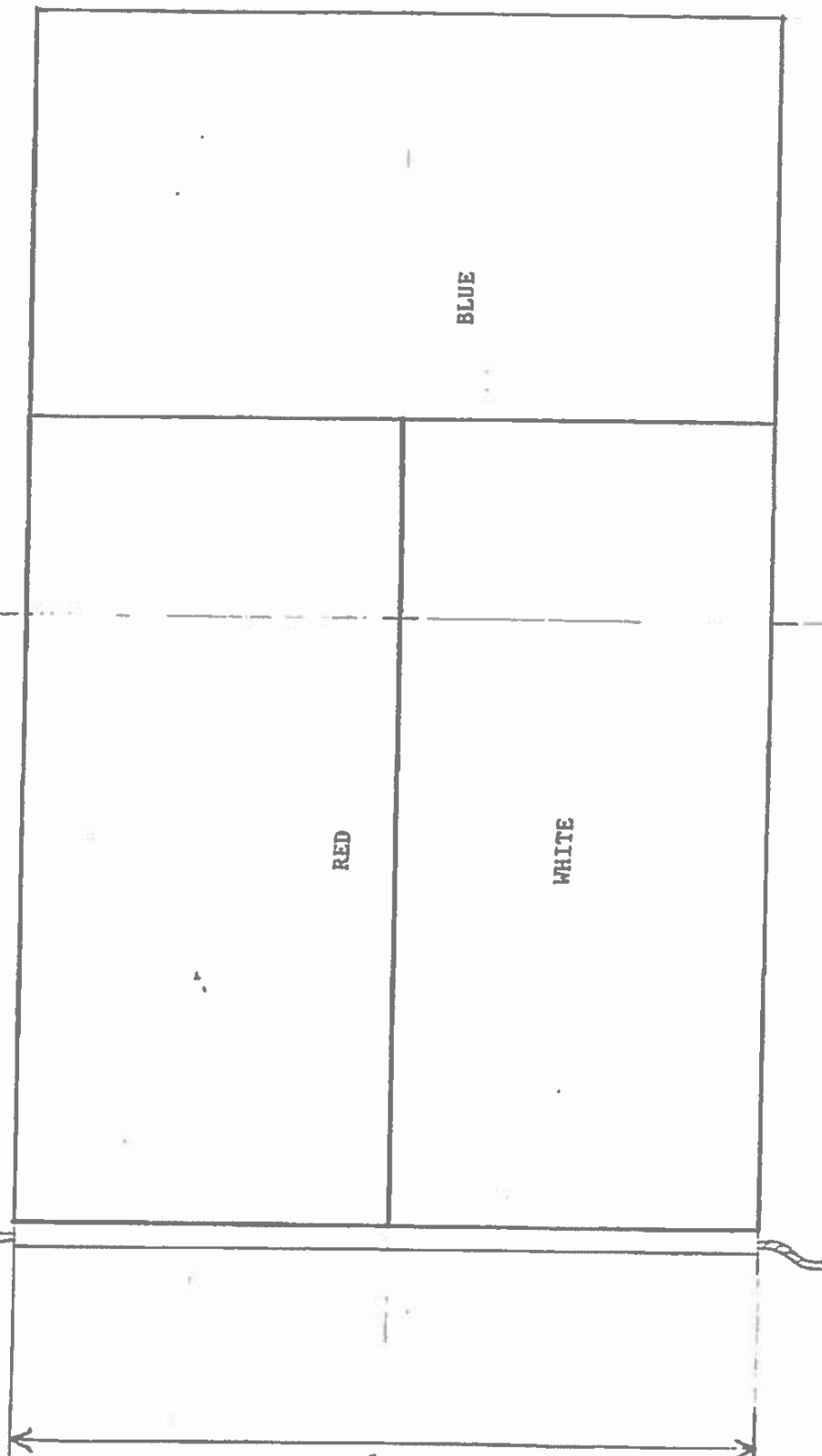
Drawn by: Matt Siemens Scale: 1/4 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: Caldwell Flag
Drawing Number: F17
Responsible Officer: Scott Watson, ISO-HDC



Drawn by: Matt Siemens Scale: 1 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: C.W. Wright Flag
Drawing Number: F.18
Responsible Officer: Scott Watson, ISO-HDC



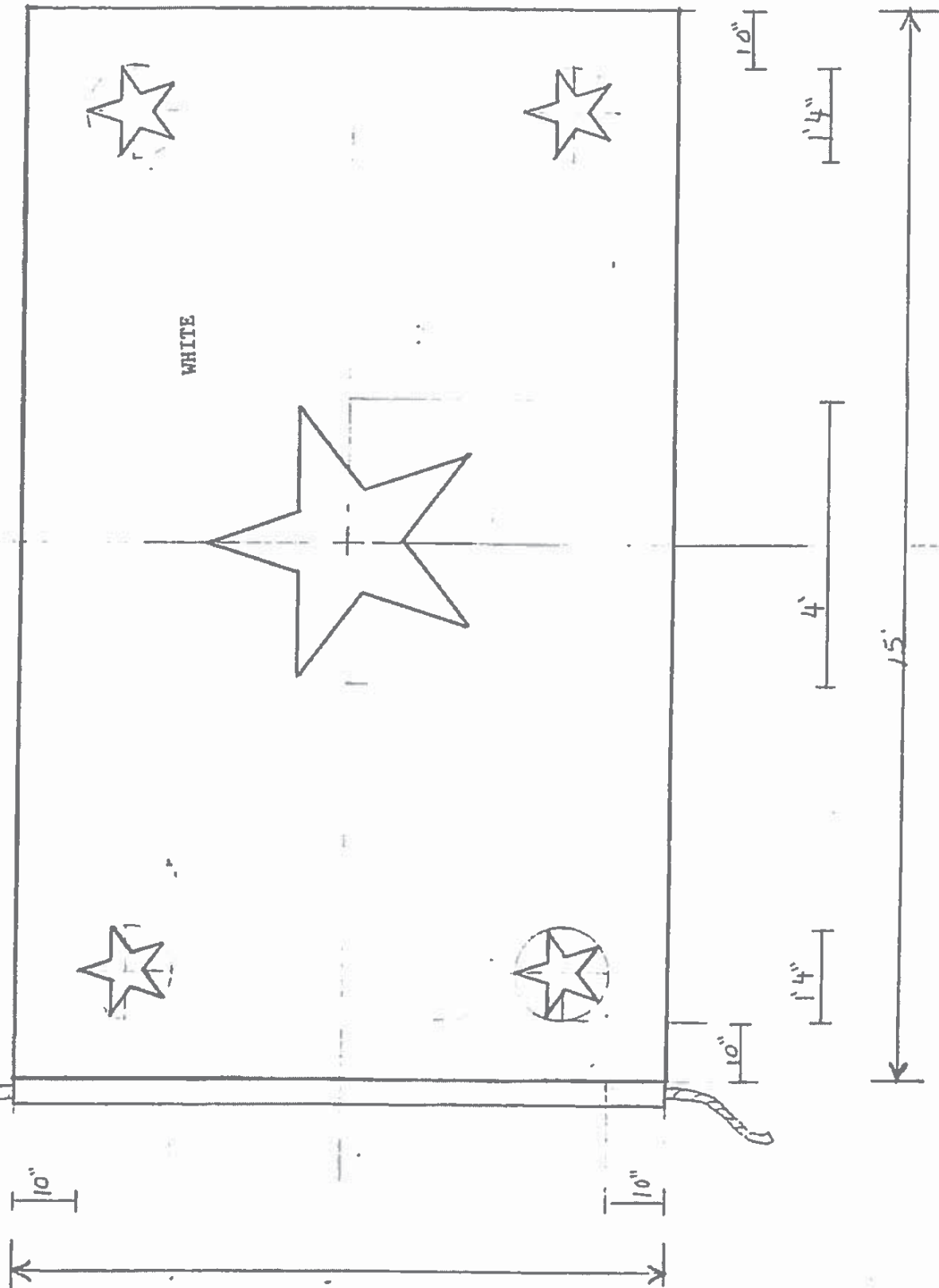
Drawn By: Matt Siemers Scale: 1/4 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: J.T. Watson, Jr. & Co., F/aj
Drawing Number: F/19
Responsible Officer: Scott Watson, ISO-HDC



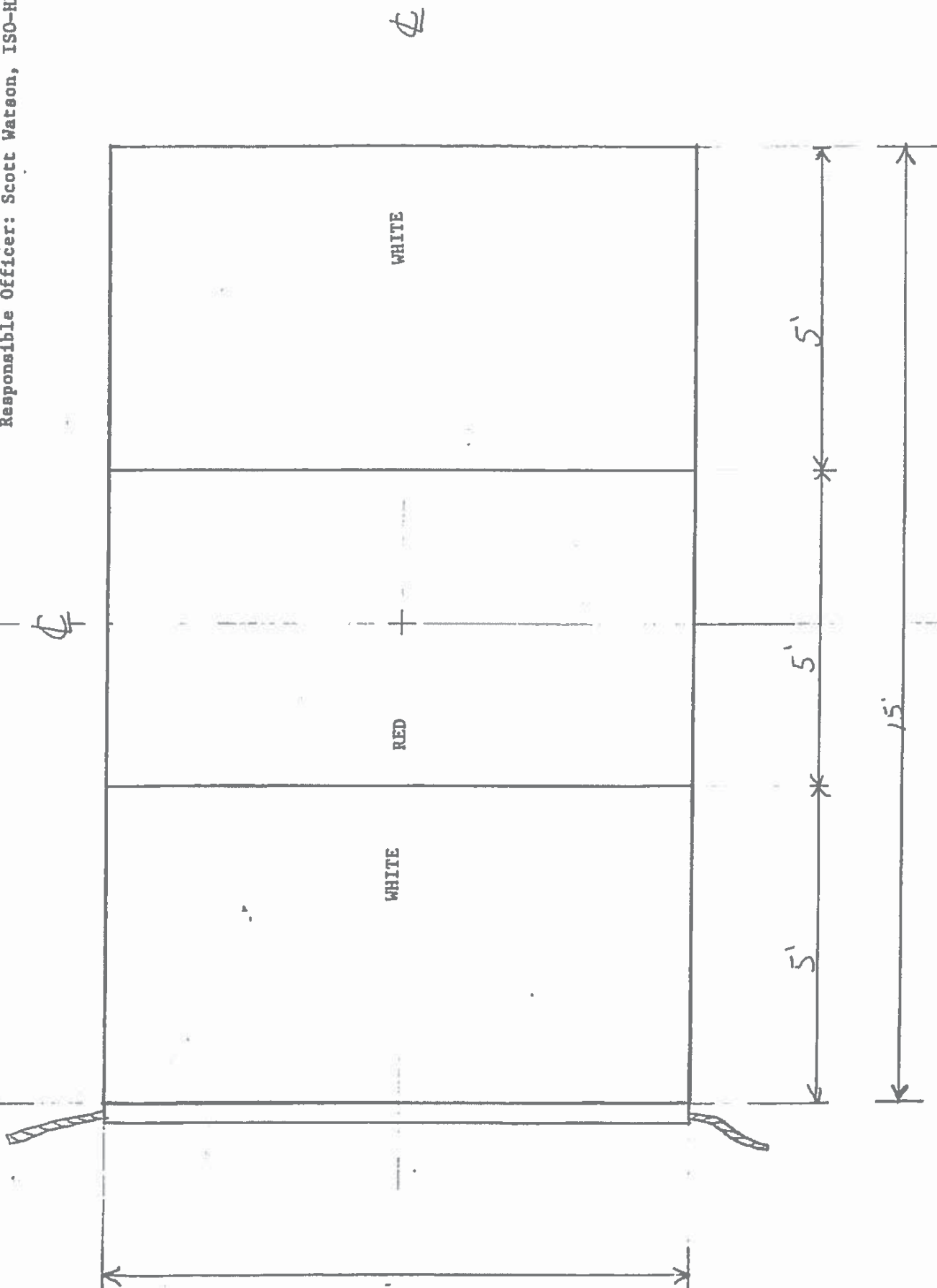
5'
10'
15'

Drawn By: Matt Siemers Scale: 1/2 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: *Fay Flag*
Drawing Number: F20
Responsible Officer: Scott Watson, ISO-HDC

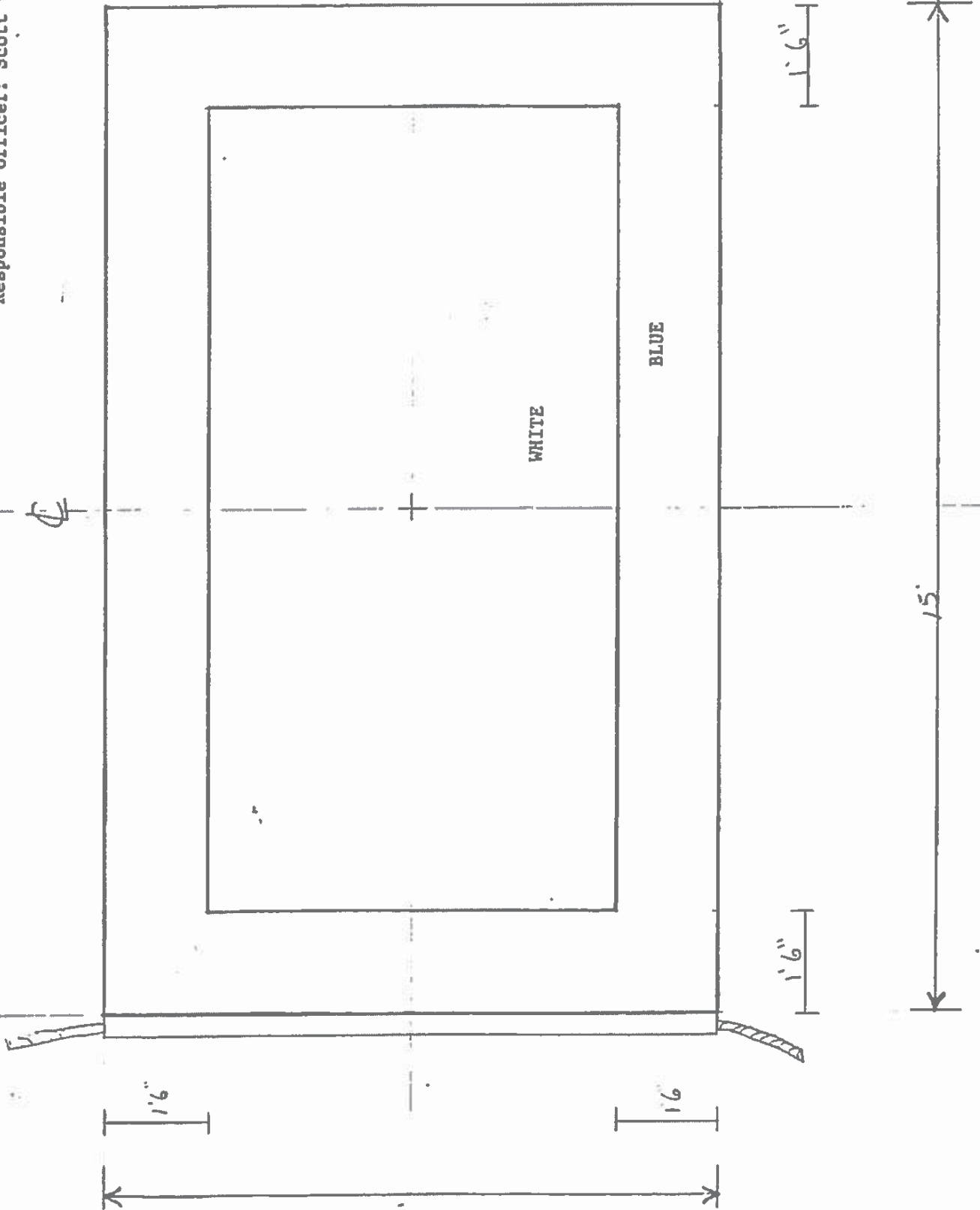
All Stars are blue



Drawn by: Matt Clemens Scale: 1/4 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: *Starchen Flag*
Drawing Number: *F21*
Responsible Officer: Scott Watson, ISO-HDC

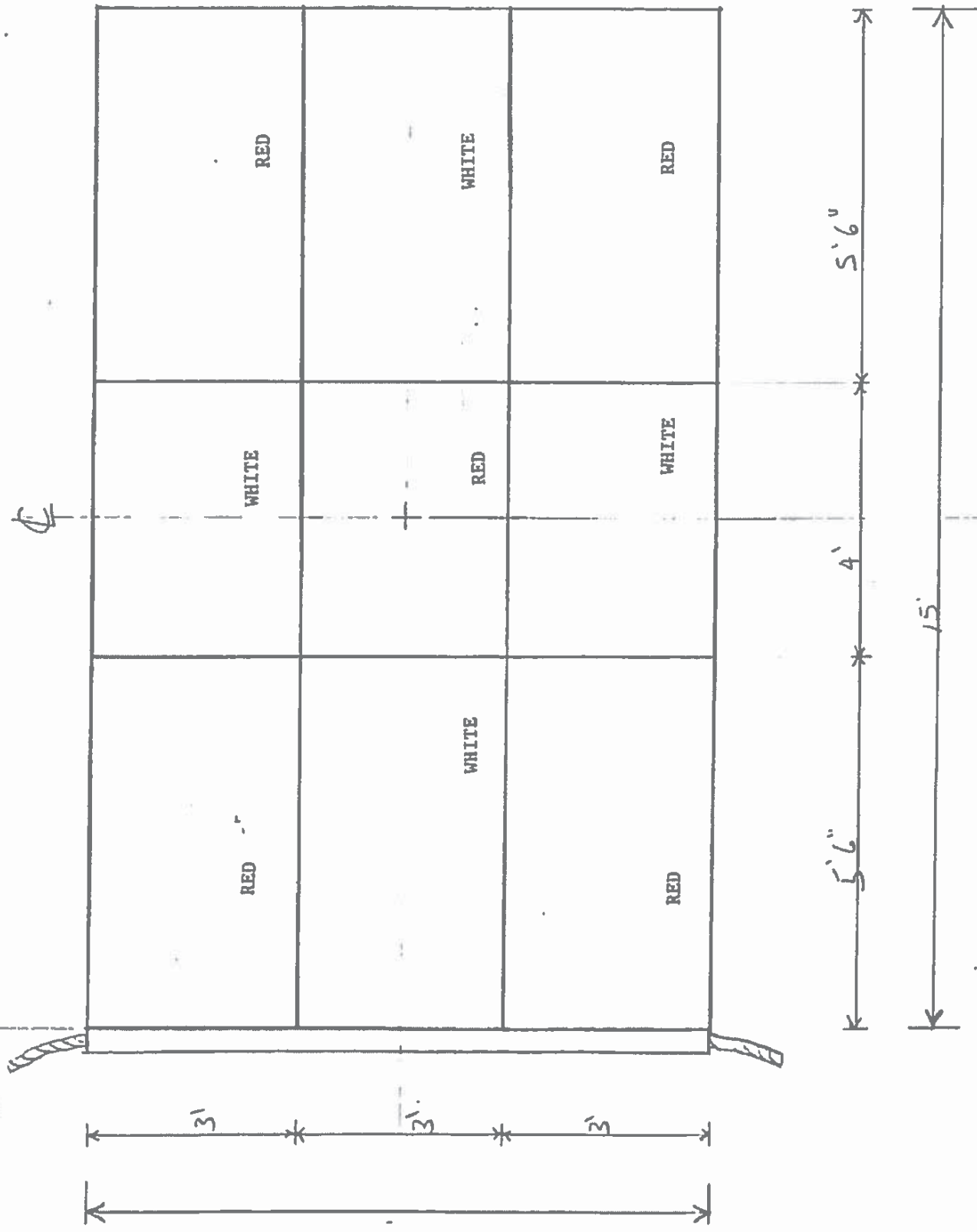


Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: Alpha 4 CD F
Drawing Number: F22
Responsible Officer: Scott Watson, ISO-HDC

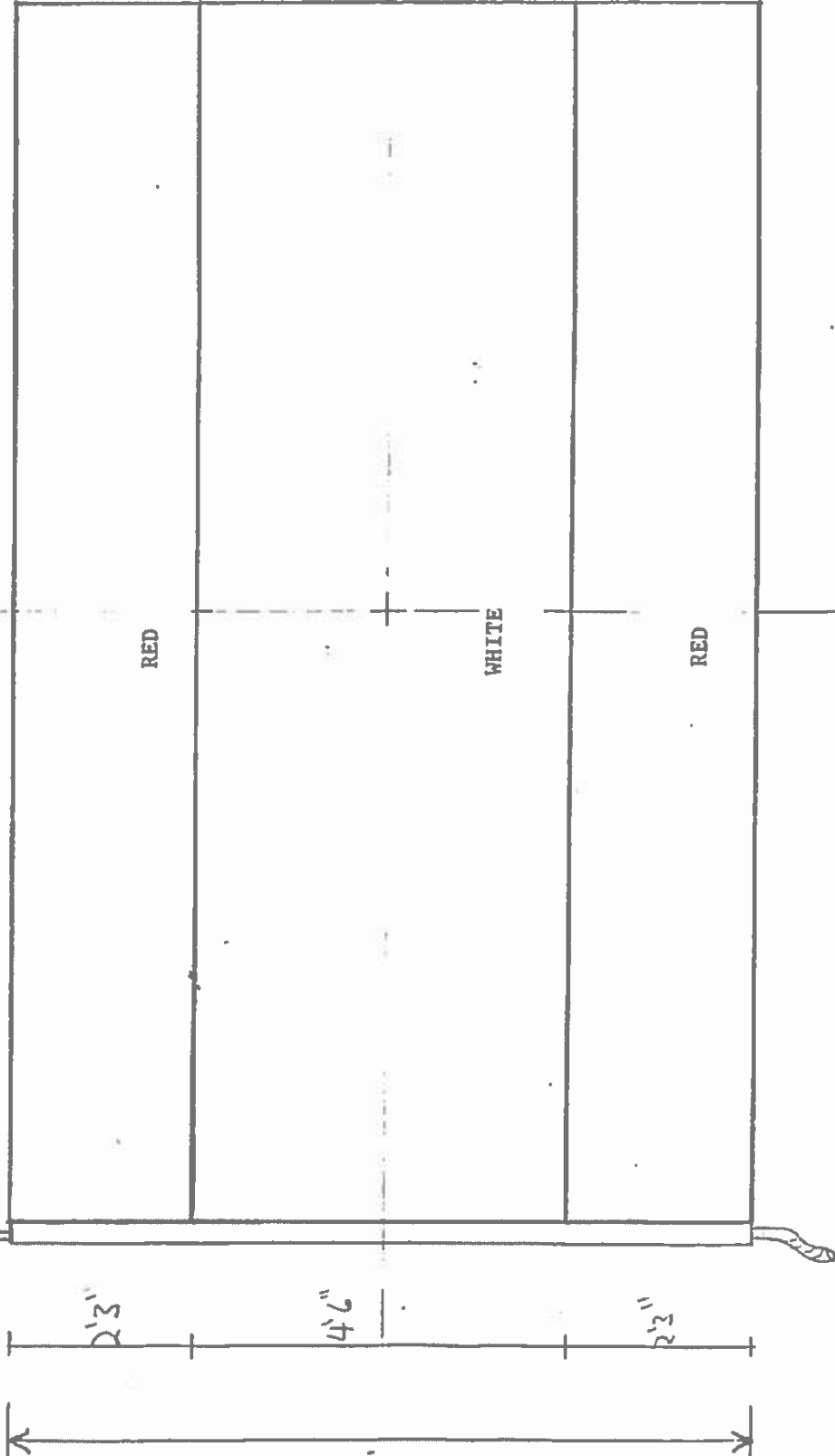


DRAWN BY: MATT SIEMERS Scale: 1/4 inch
 Design Based on Historic Chart
 Project Title: Commercial Signal Flags
 Drawing Title: *Signal & Color Flag*
 Drawing Number: *F.2.3*
 Responsible Officer: Scott Watson, ISO-HDC

②



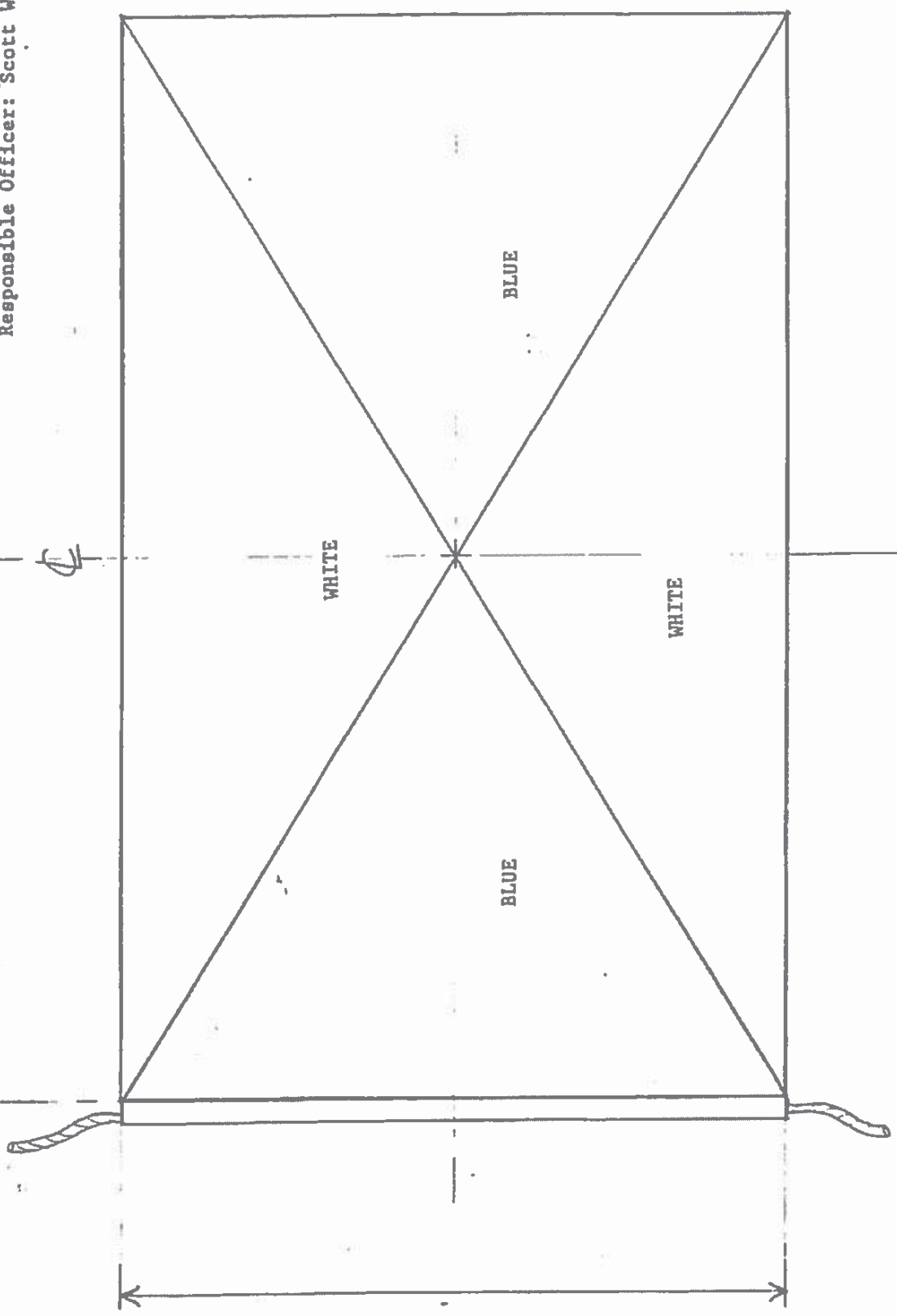
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: *MucLean Campbell 1820 Flag*
Drawing Number: F.24
Responsible Officer: Scott Watson, ISO-HDC



2

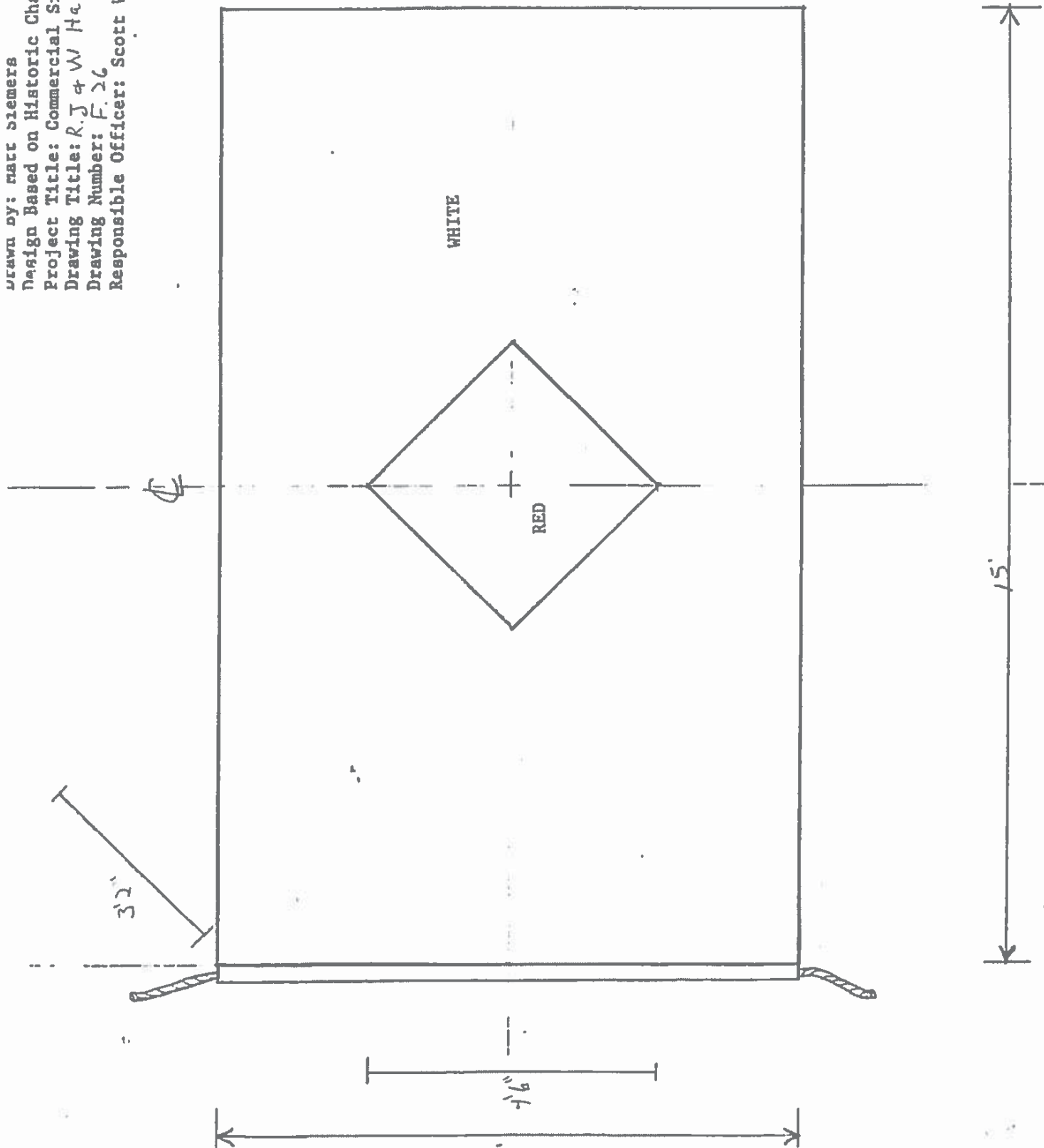


Drawn by: [unclear] Scale: 1 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: Wm Lawson Flag
Drawing Number: F. 25
Responsible Officer: Scott Watson, ISO-HBC



4

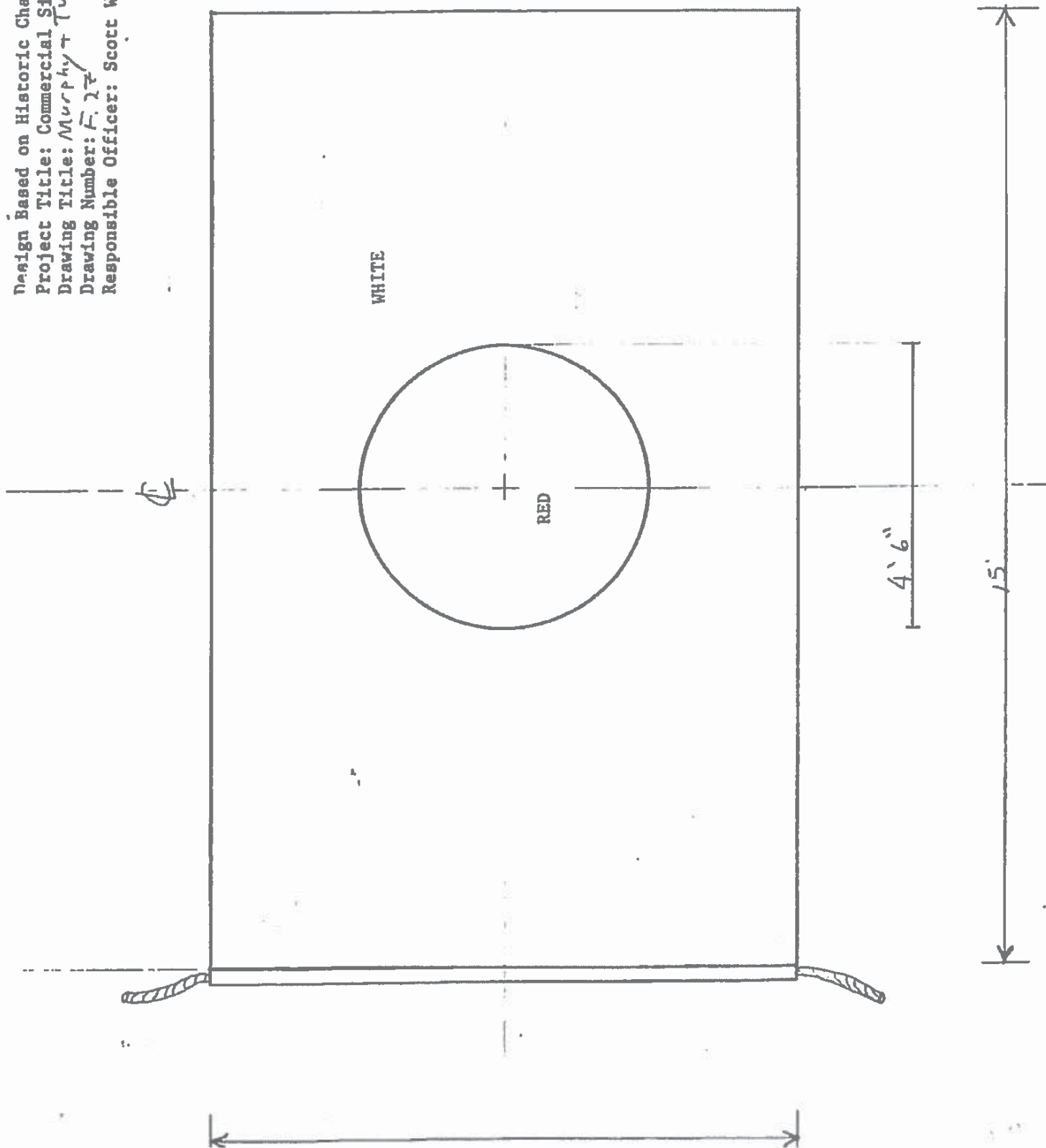
Drawn by: Matt Siemers Scale: 1/4 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: R, J & W Hart Flag
Drawing Number: F.26
Responsible Officer: Scott Watson, ISO-HDC



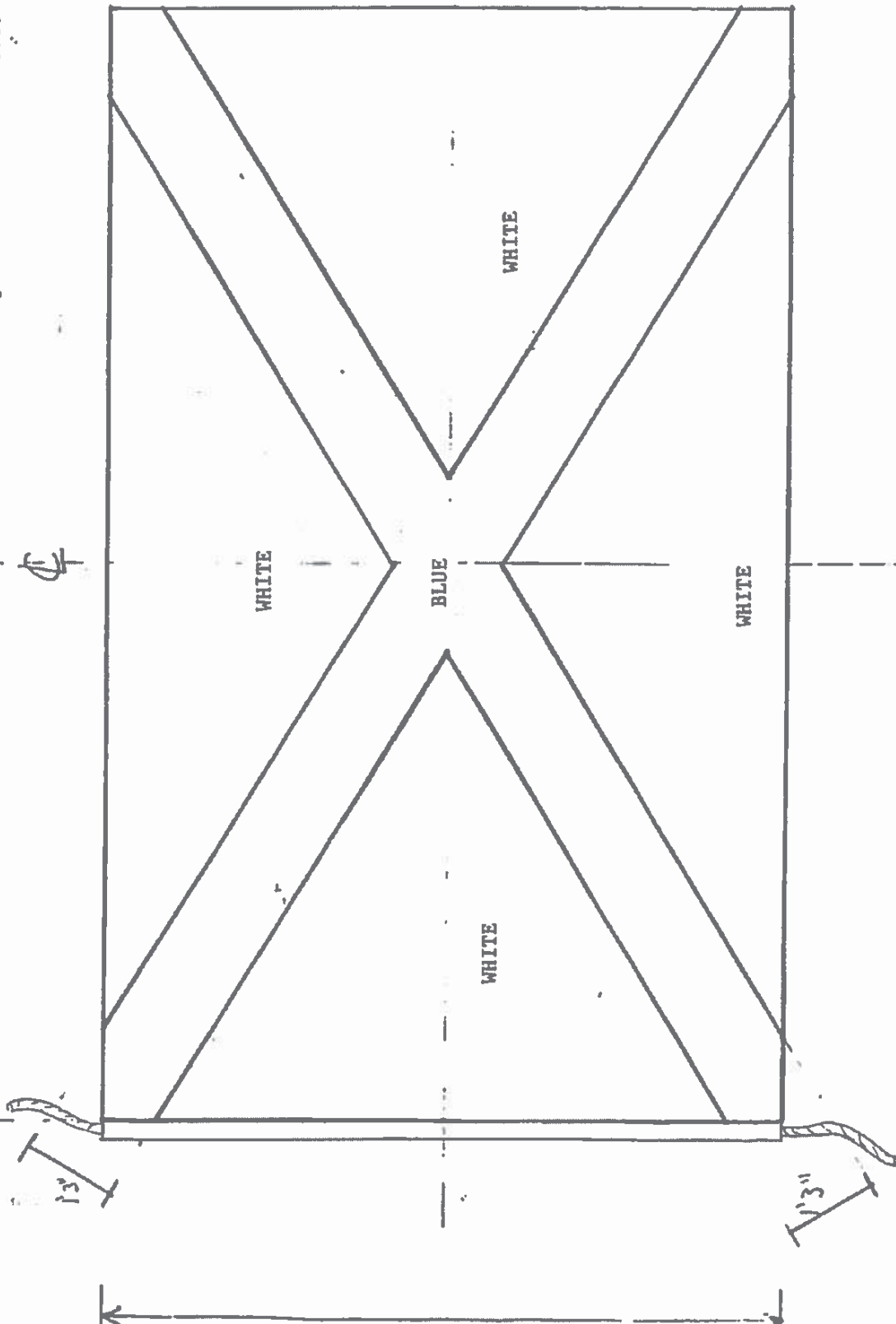
⊕

Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: *Murphy + Twining Flag*
Drawing Number: *F. 27*
Responsible Officer: Scott Watson, ISO-HDC

2

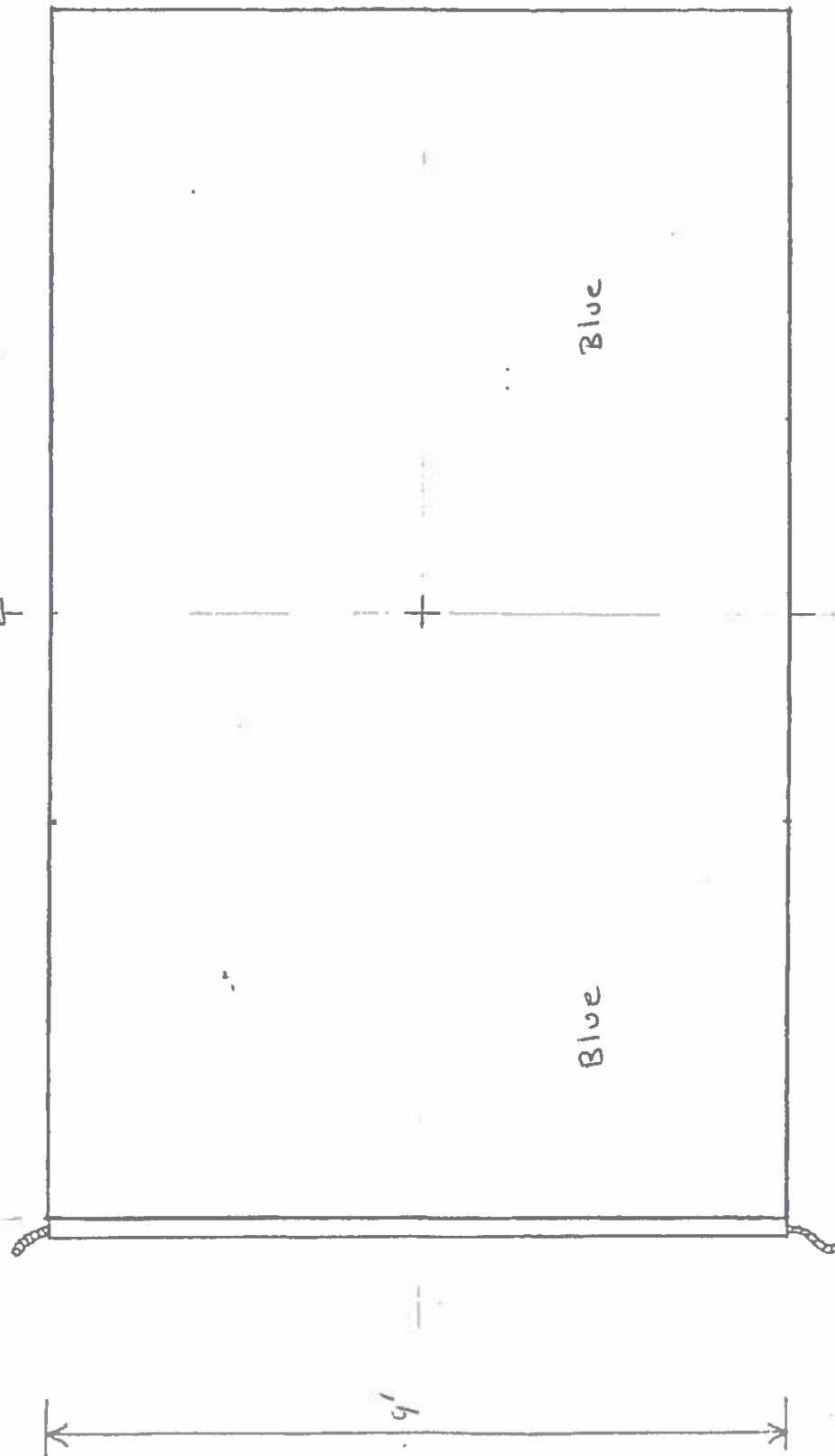


Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: J E. Cummings Flag
Drawing Number: F. 28
Responsible Officer: Scott Watson, ISO-HDC



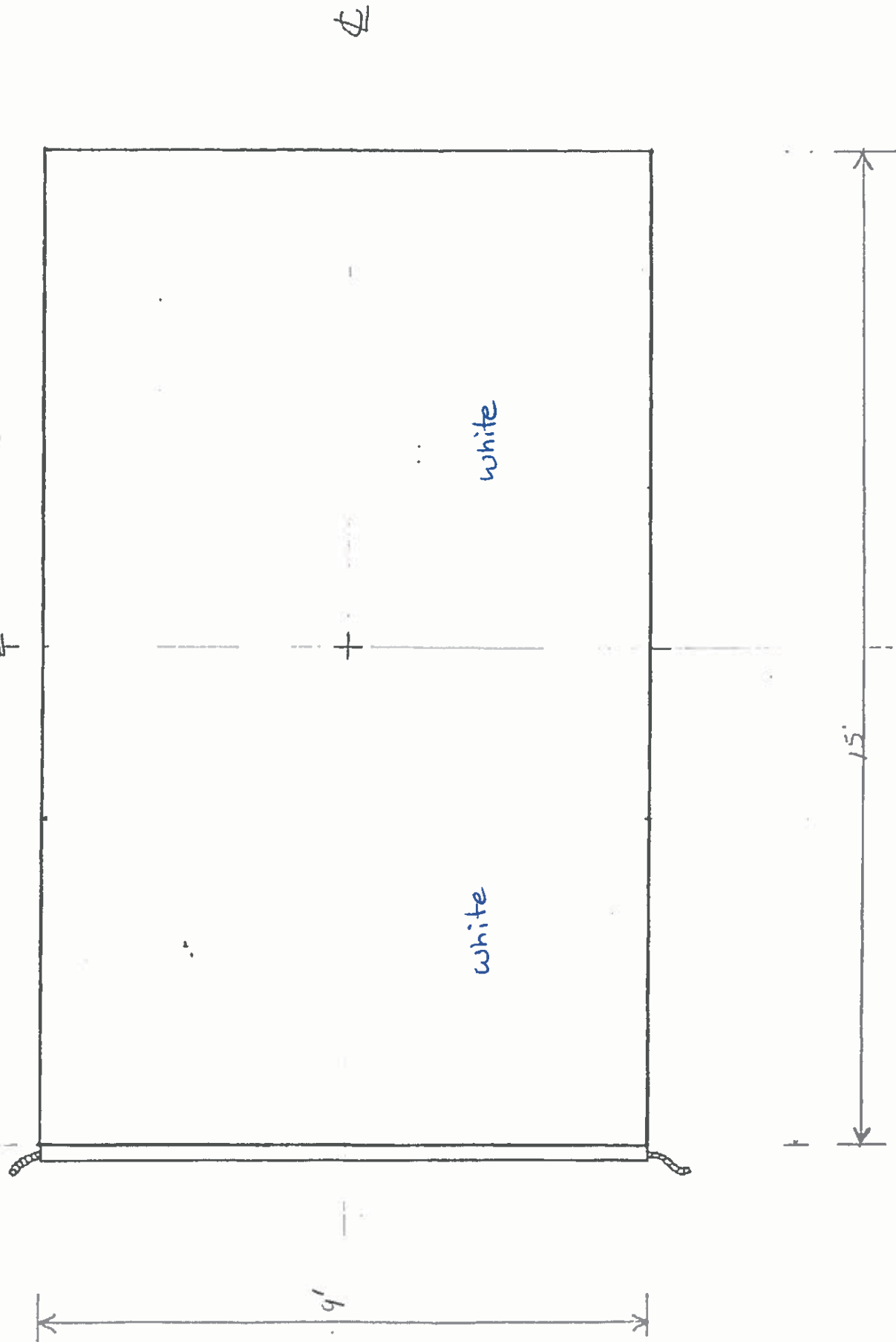
2

Drawn by: Matt Clemens Scale: 1/4 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: Neutral Merchantman
Drawing Number:
Responsible Officer: Scott Watson, ISO-HDC

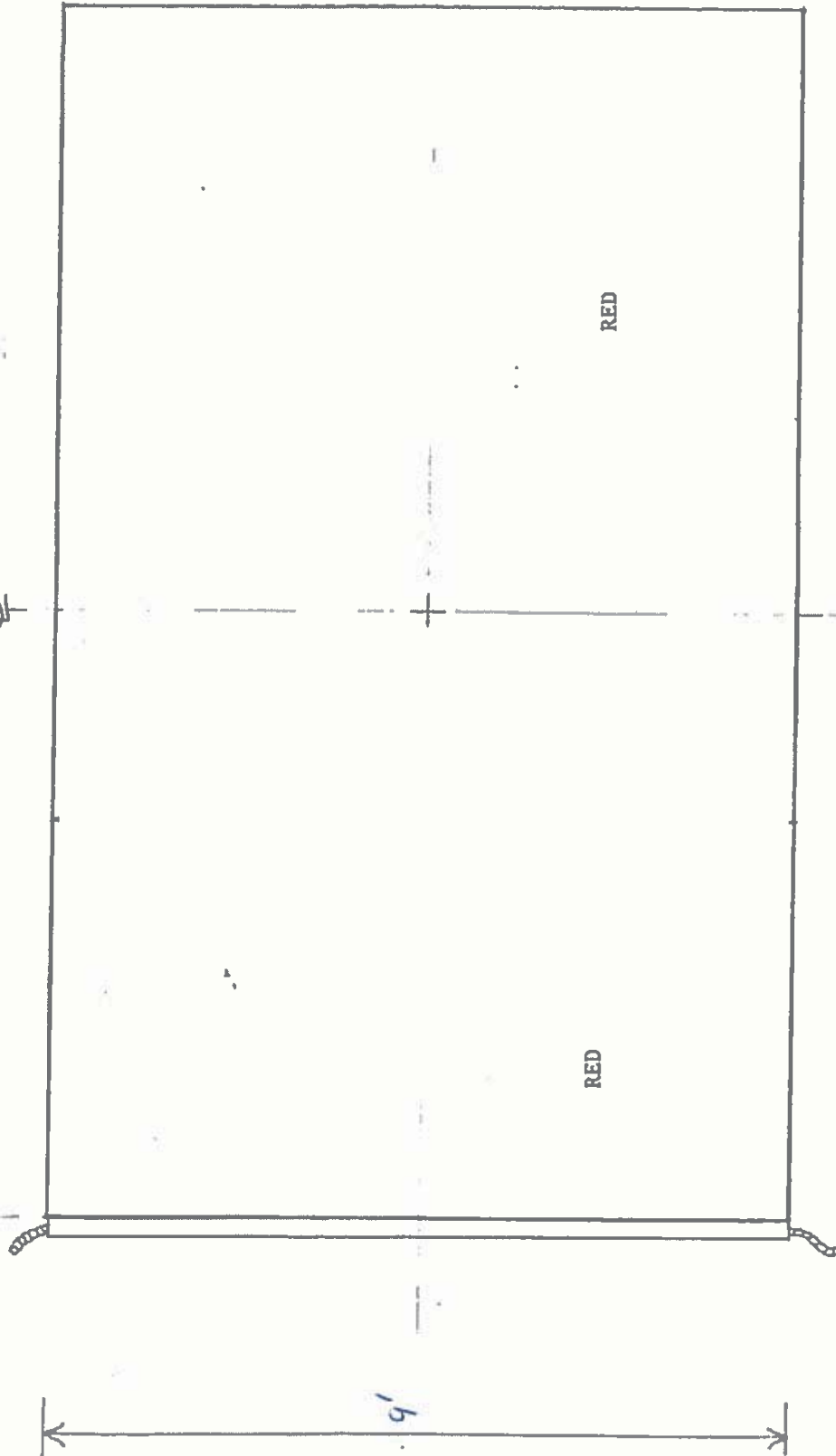


4

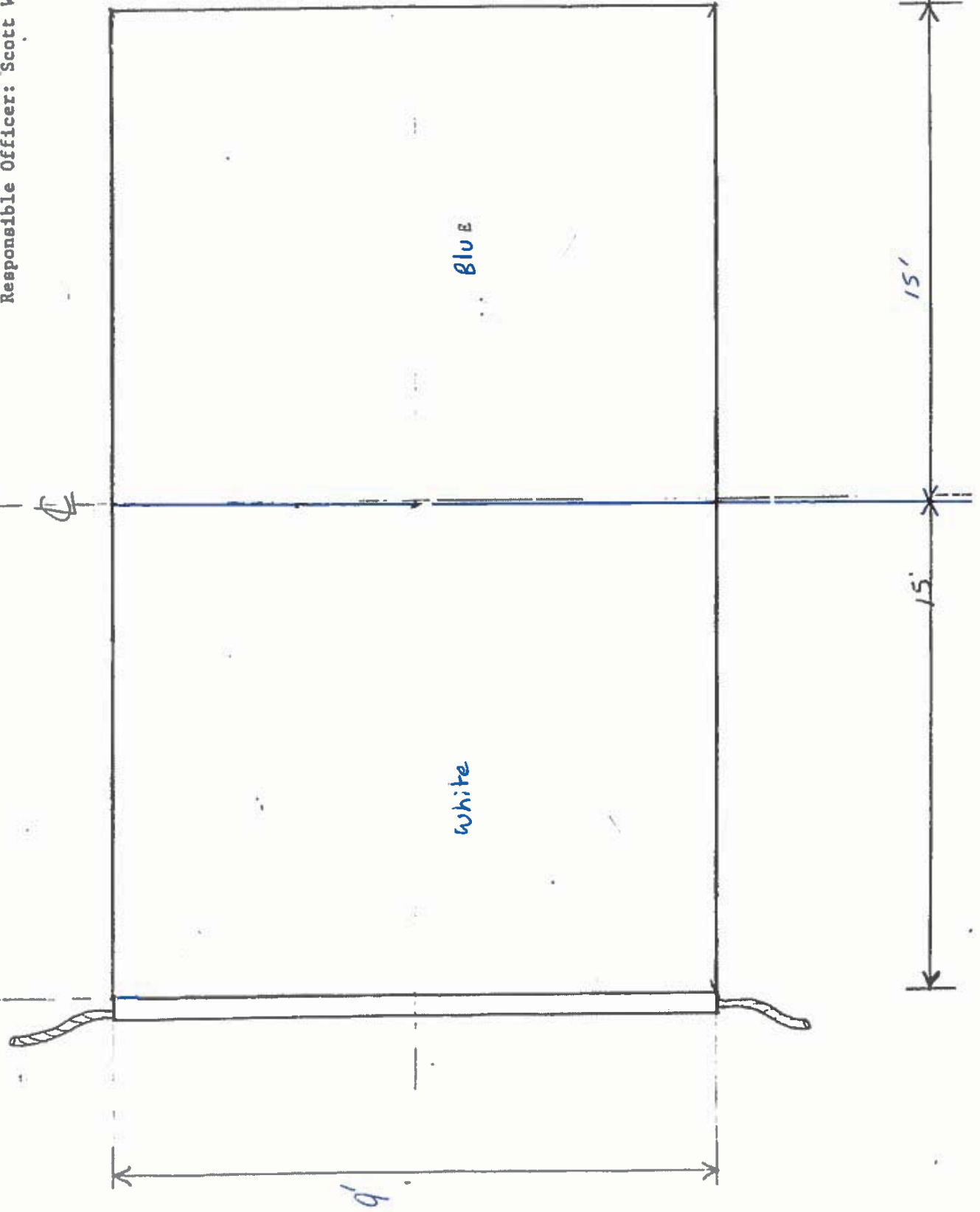
Drawn by: Matt Clemens Scale: 1/4 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: *Flag of Truce*
Drawing Number:
Responsible Officer: Scott Watson, ISO-HDC



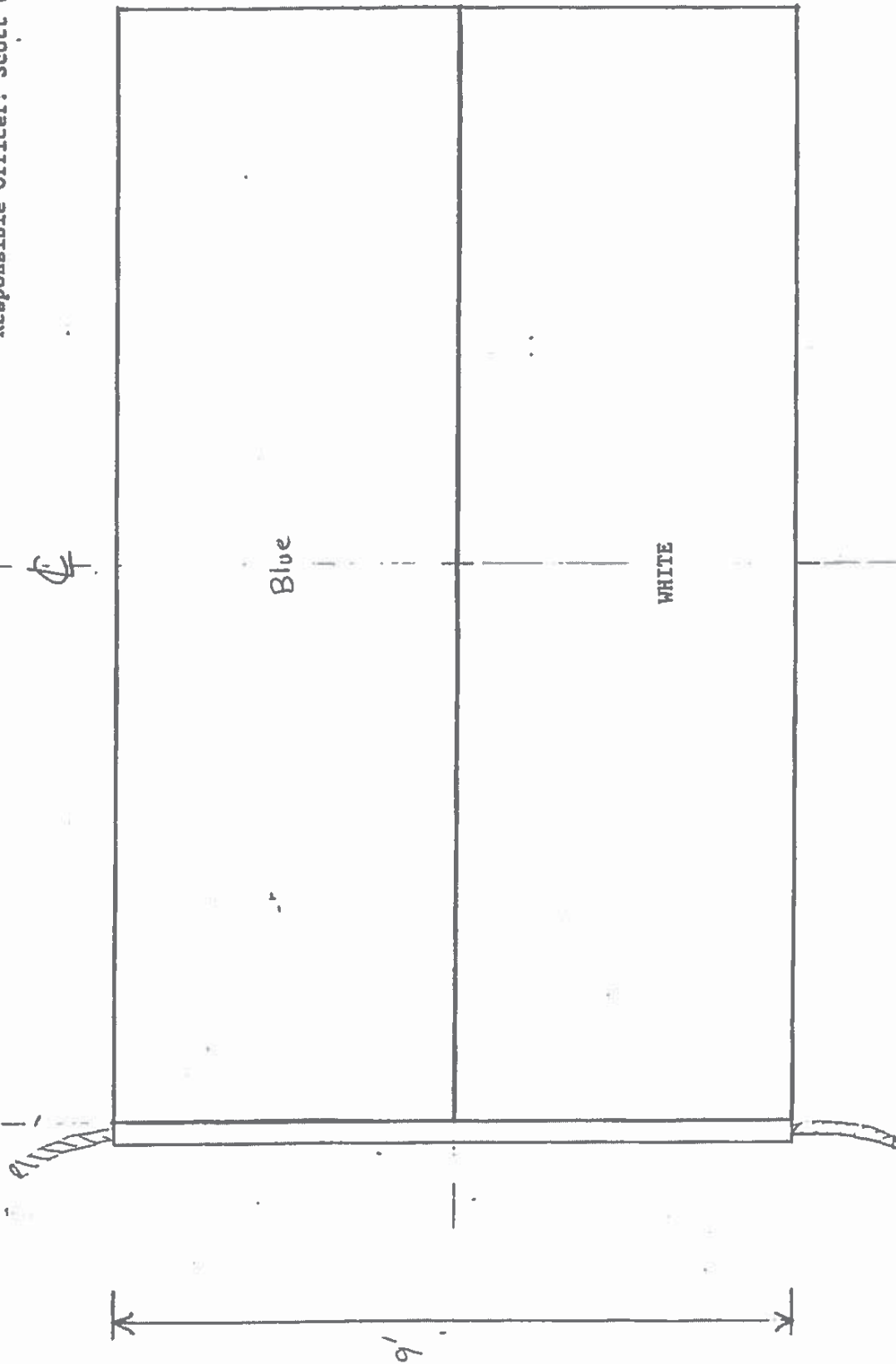
Drawn by: Matt Bremers Scale: 1/4 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: *Enemy's Merchantman*
Drawing Number:
Responsible Officer: Scott Watson, ISO-HDC



Drawn by: Paul Bremer Scale: 1 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: Black Bros+ Co
Drawing Number:
Responsible Officer: Scott Watson, ISO-HDC

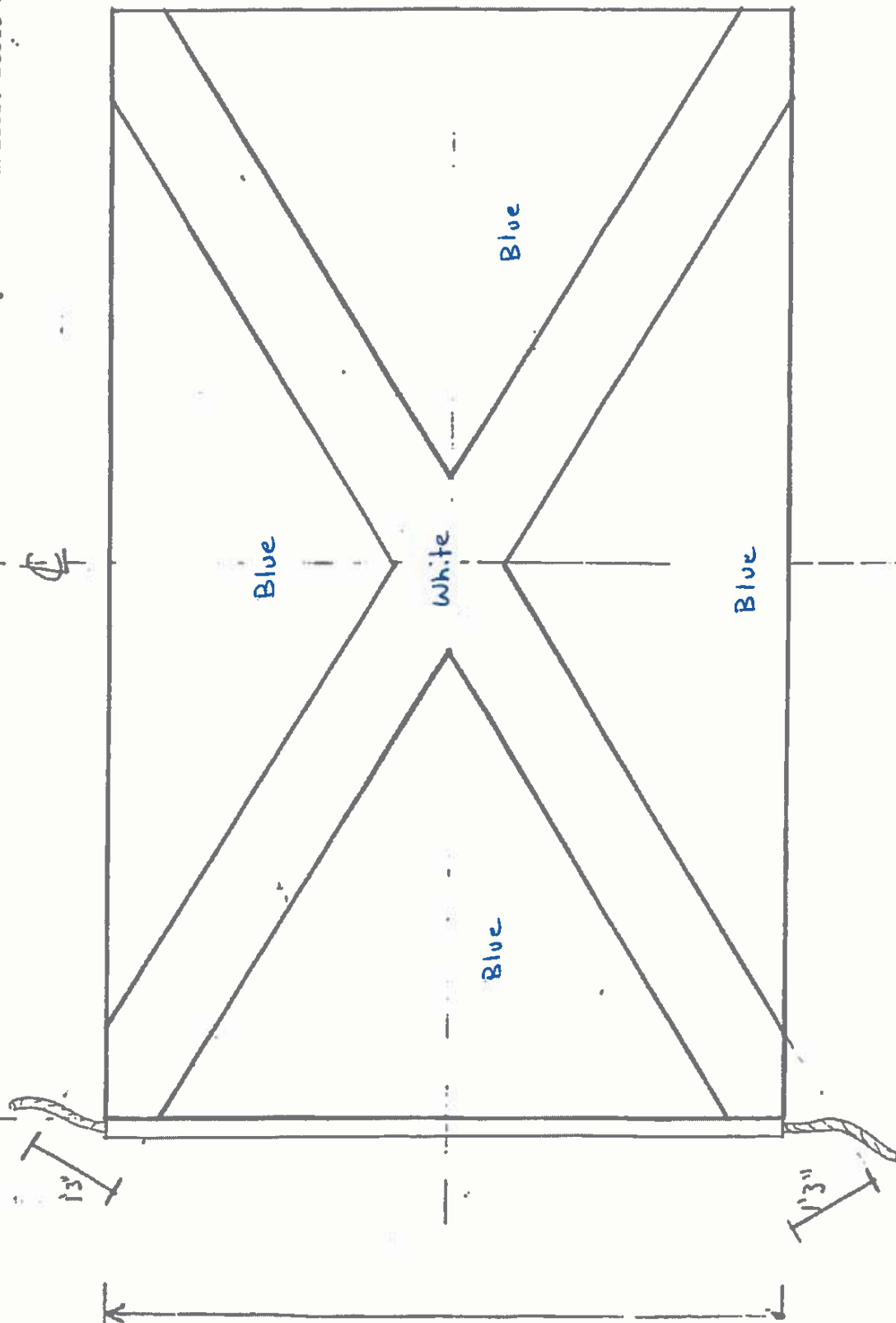


Drawn By: Matt Siemens Scale: 1/2 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: *Pyror + Son*
Drawing Number:
Responsible Officer: Scott Watson, ISO-HDC

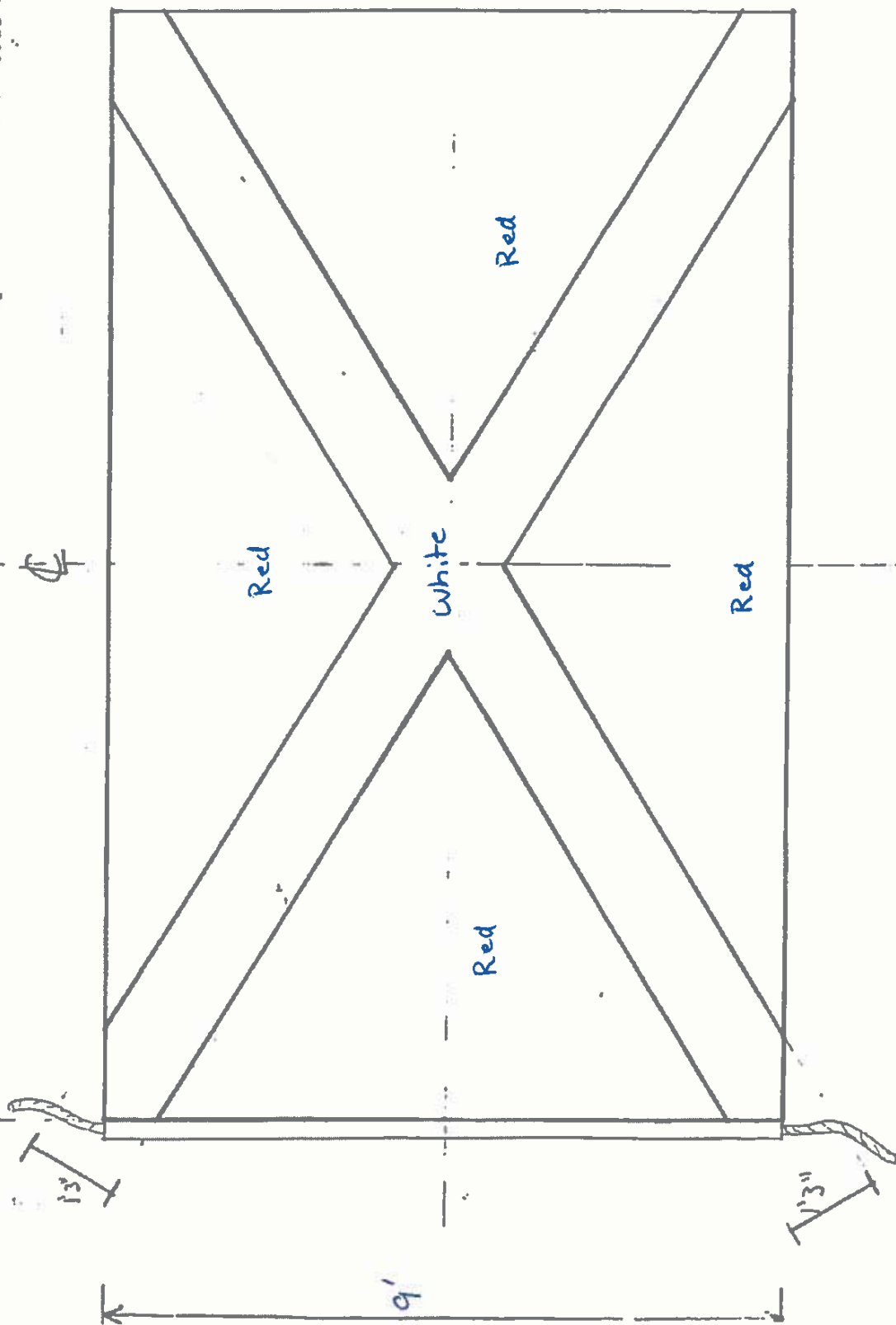


②

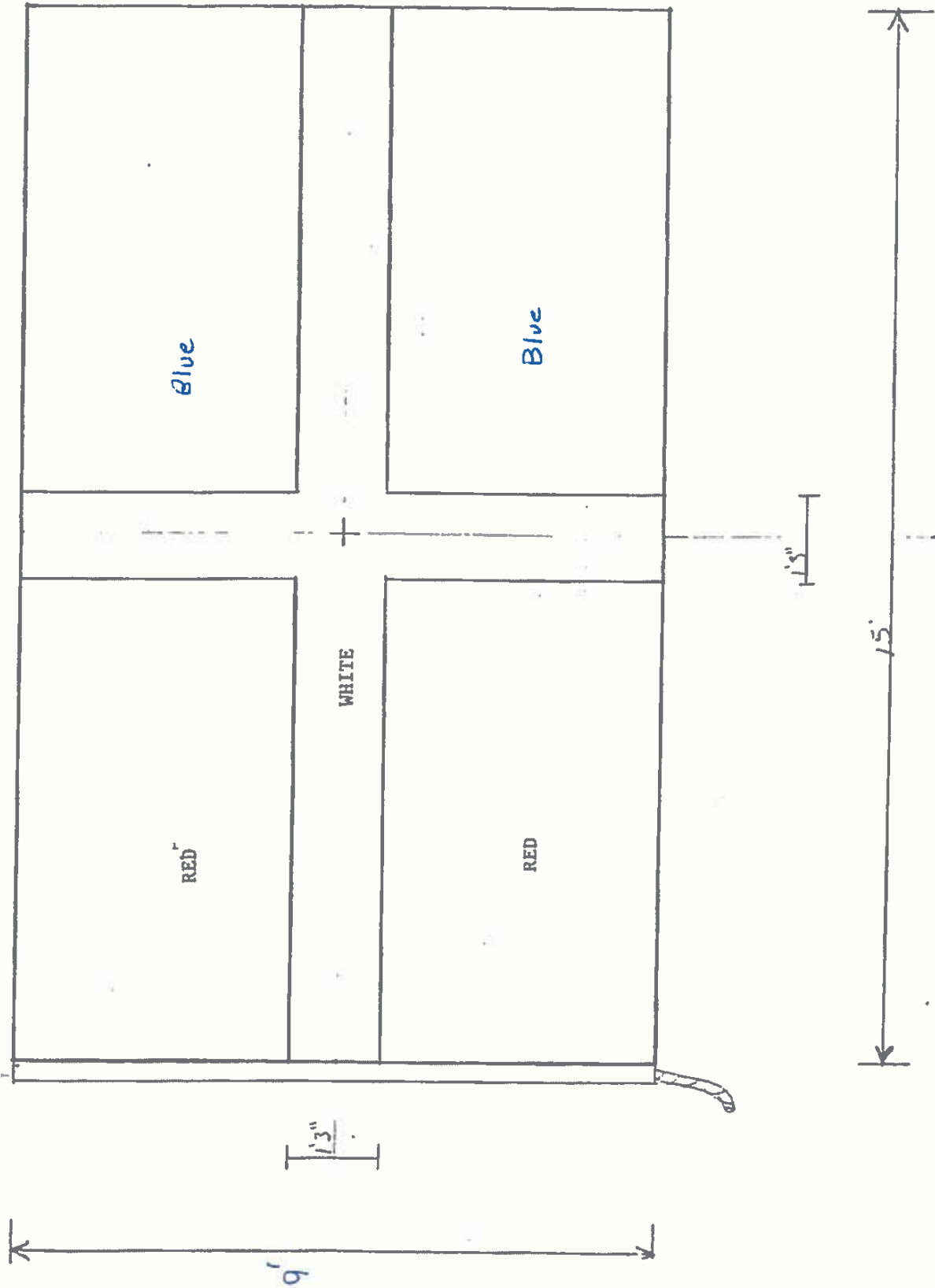
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: Essex Boak & Co
Drawing Number:
Responsible Officer: Scott Watson, ISO-HDC



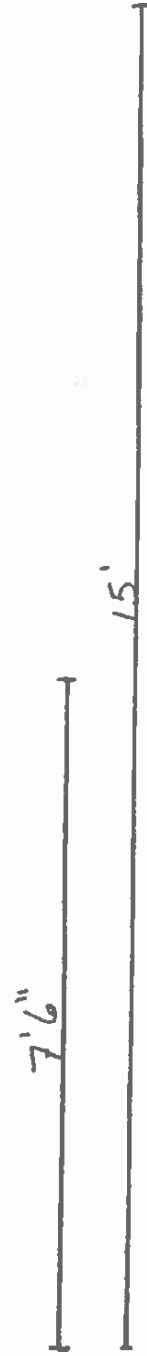
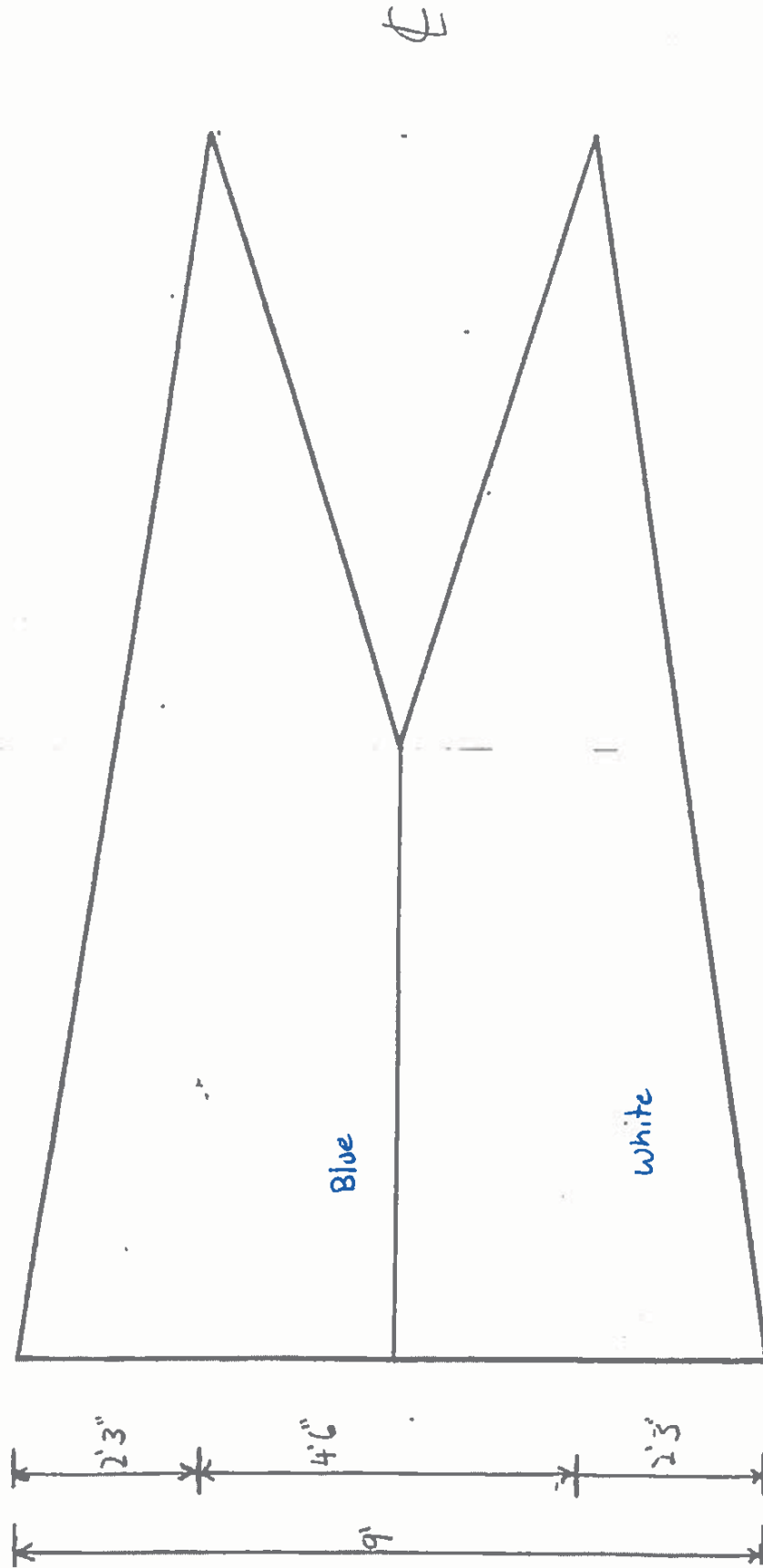
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: J G A Creighton + Co
Drawing Number:
Responsible Officer: Scott Watson, ISO-HDC



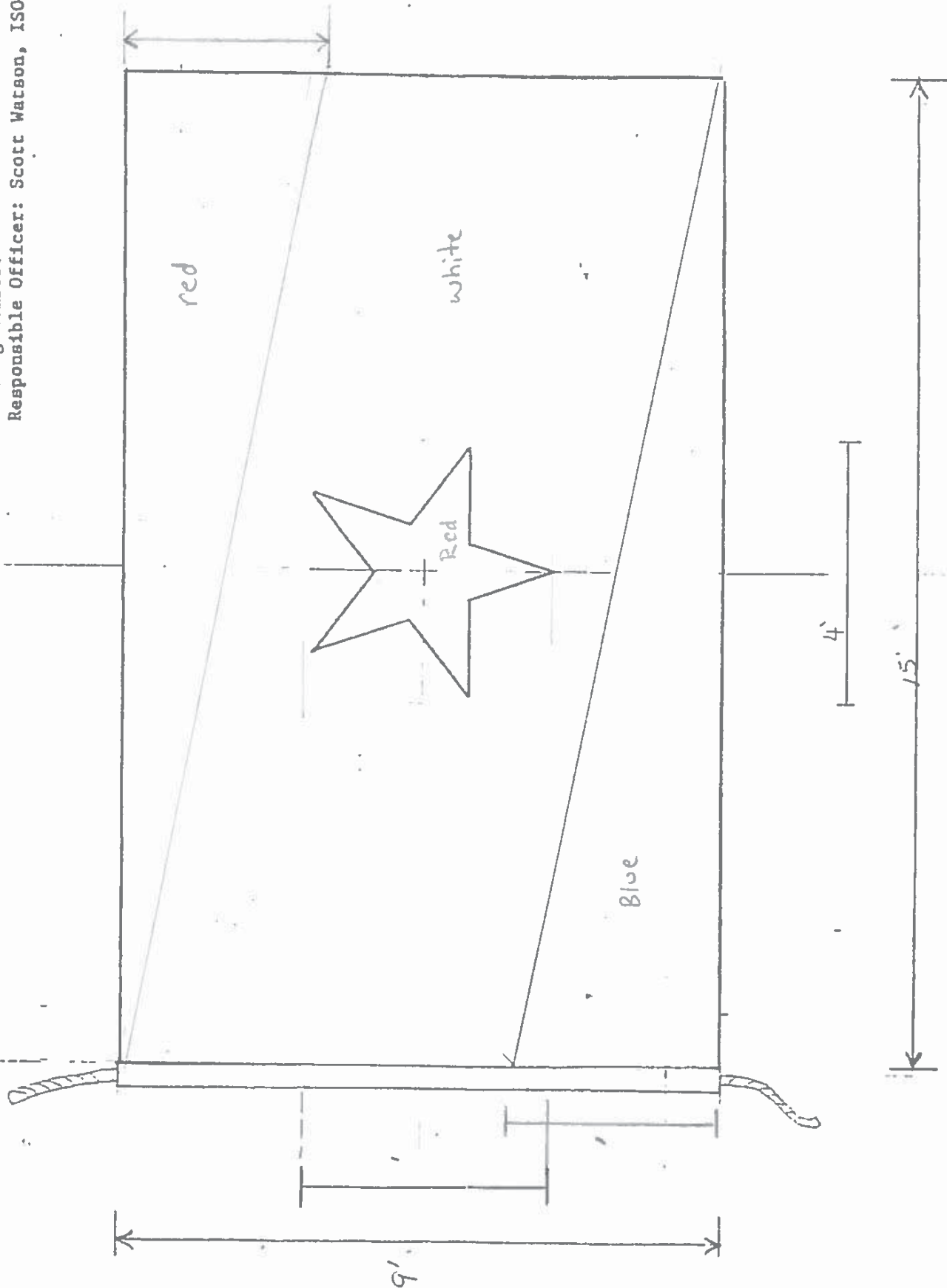
Drawn by: Russ Stewers Scale: 1/4 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: Wm Hare
Drawing Number:
Responsible Officer: Scott Watson, ISO-HDC



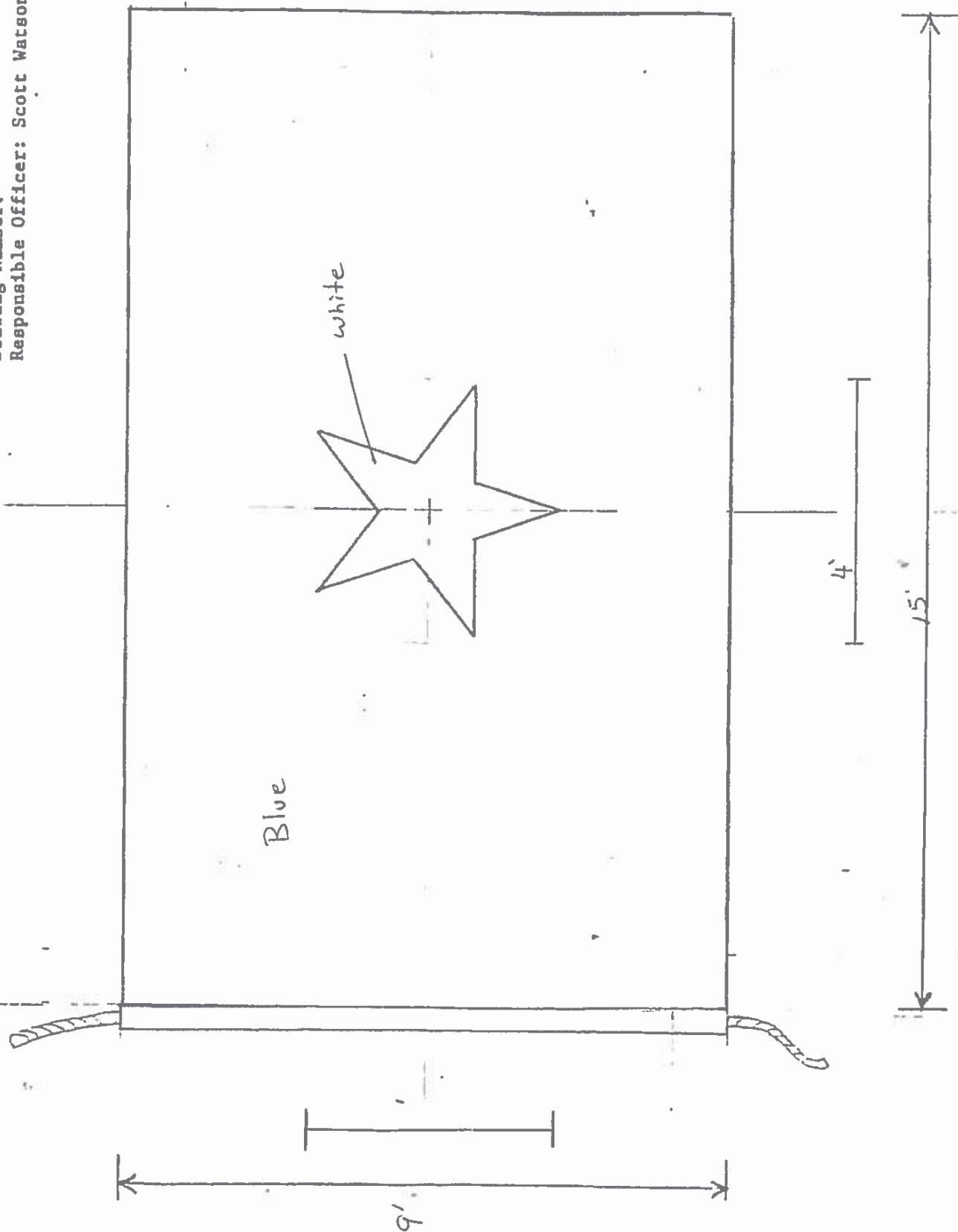
Drawn By: Matt Siemers Scale: 1/4 inch
Design based on historic chart
Project Title: Commercial Signal Flags
Drawing Title: G + A Mitchell
Drawing Number:
Responsible Officer: Scott Watson, ISO-HDC



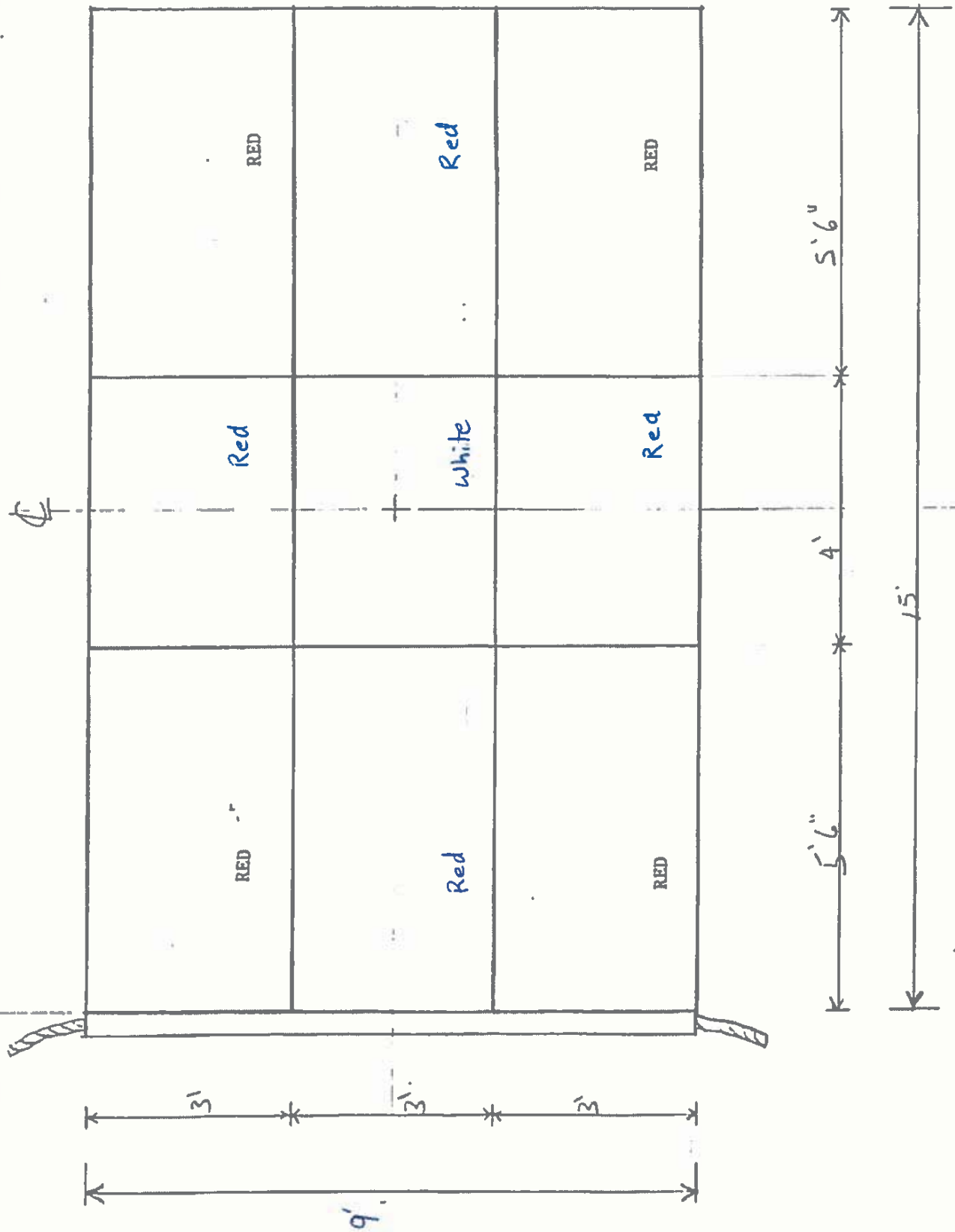
Drawn By: Matt Siemers Scale: 1/2 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: J. M. Watson + Co
Drawing Number:
Responsible Officer: Scott Watson, ISO-HDC



Drawn By: Matt Siemens Scale: 1/2 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: *Conard*
Drawing Number:
Responsible Officer: Scott Watson, ISO-HDC

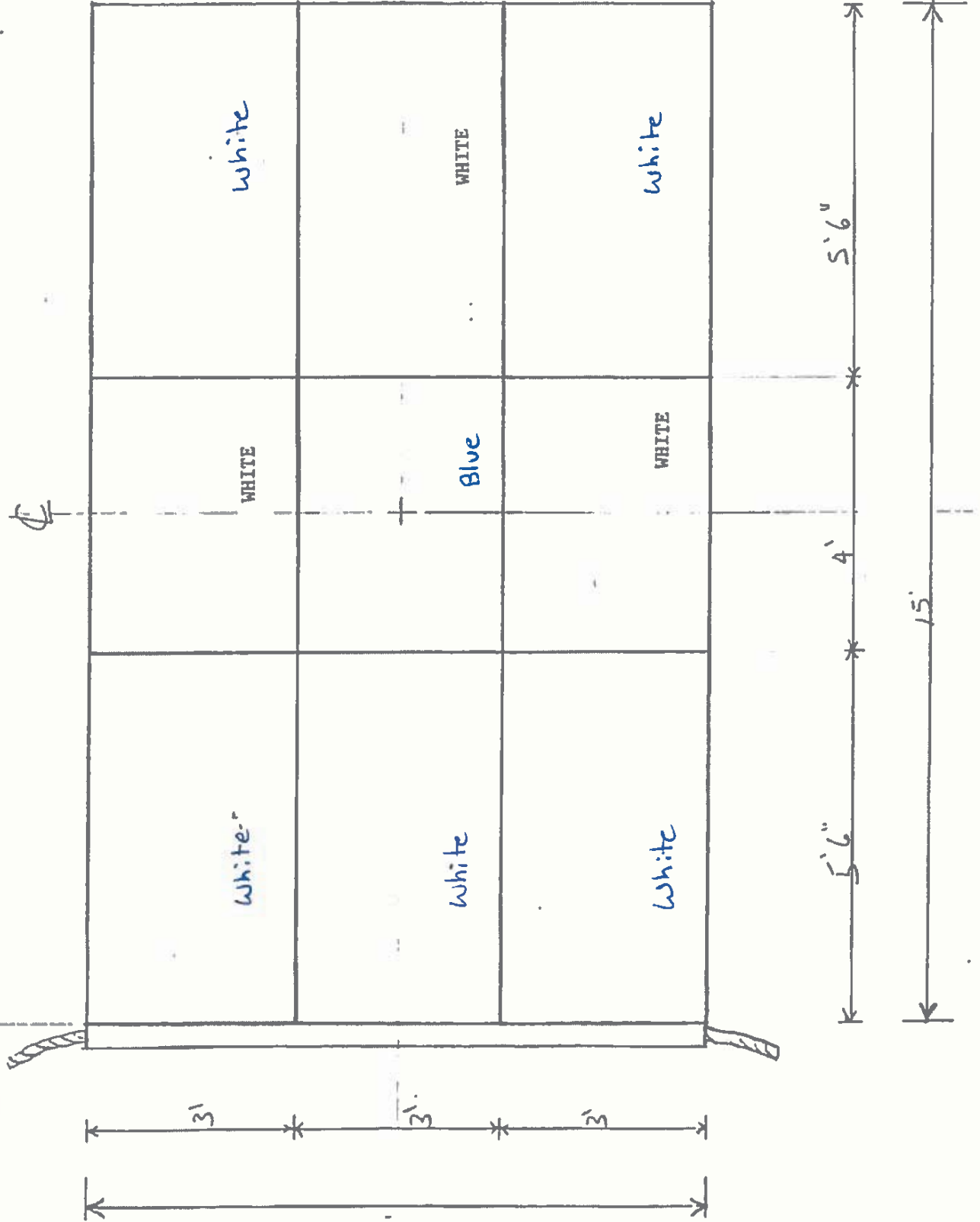


Drawn by: Matt Siemers Scale: 1/4 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: *Deblois and Merkle*
Drawing Number:
Responsible Officer: Scott Watson, ISO-HDC



Drawn by: Matt Siemers Scale: 1/4 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: *Stairs Son + Morrow*
Drawing Number:
Responsible Officer: Scott Watson, ISO-HDC

4



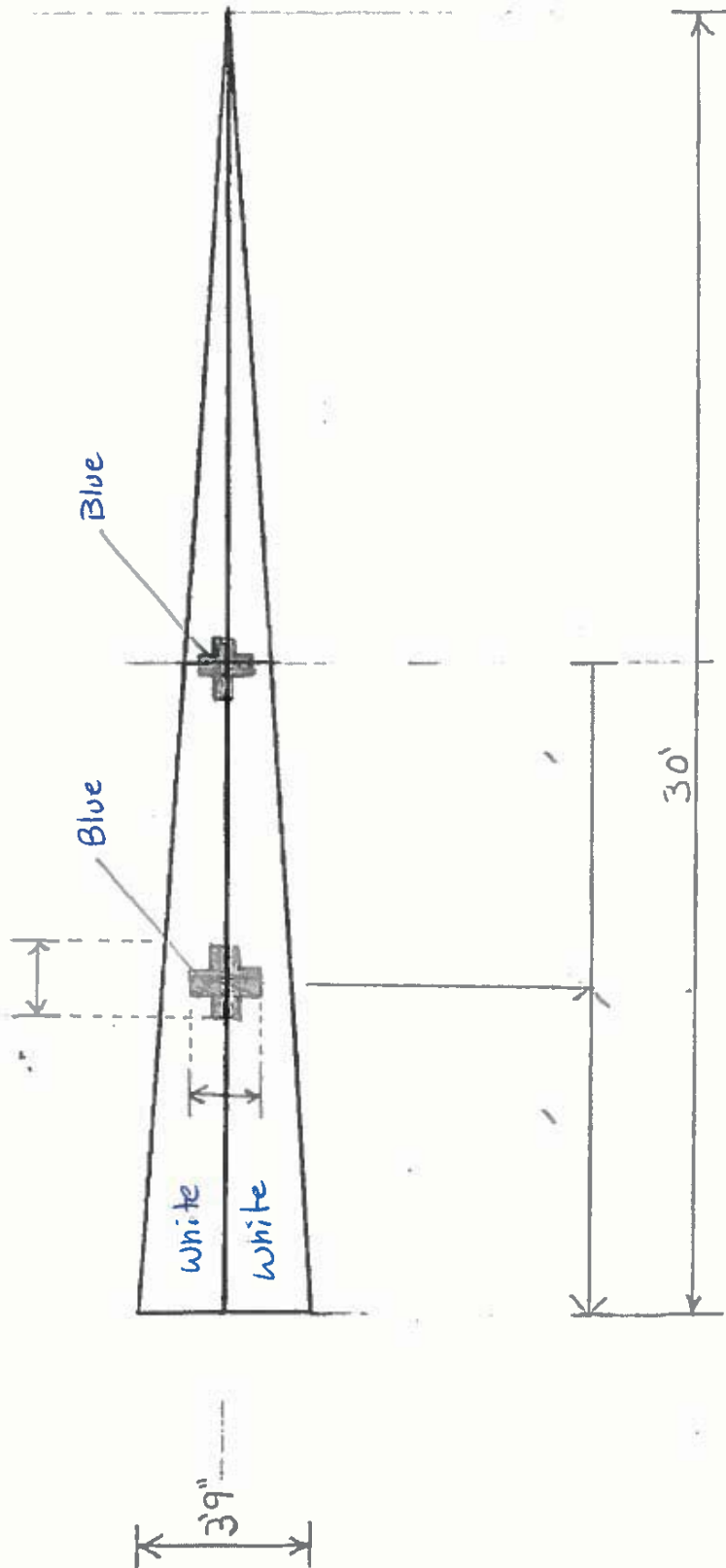
Design Based on Historic Chart

Project Title: Commercial Signal Flags

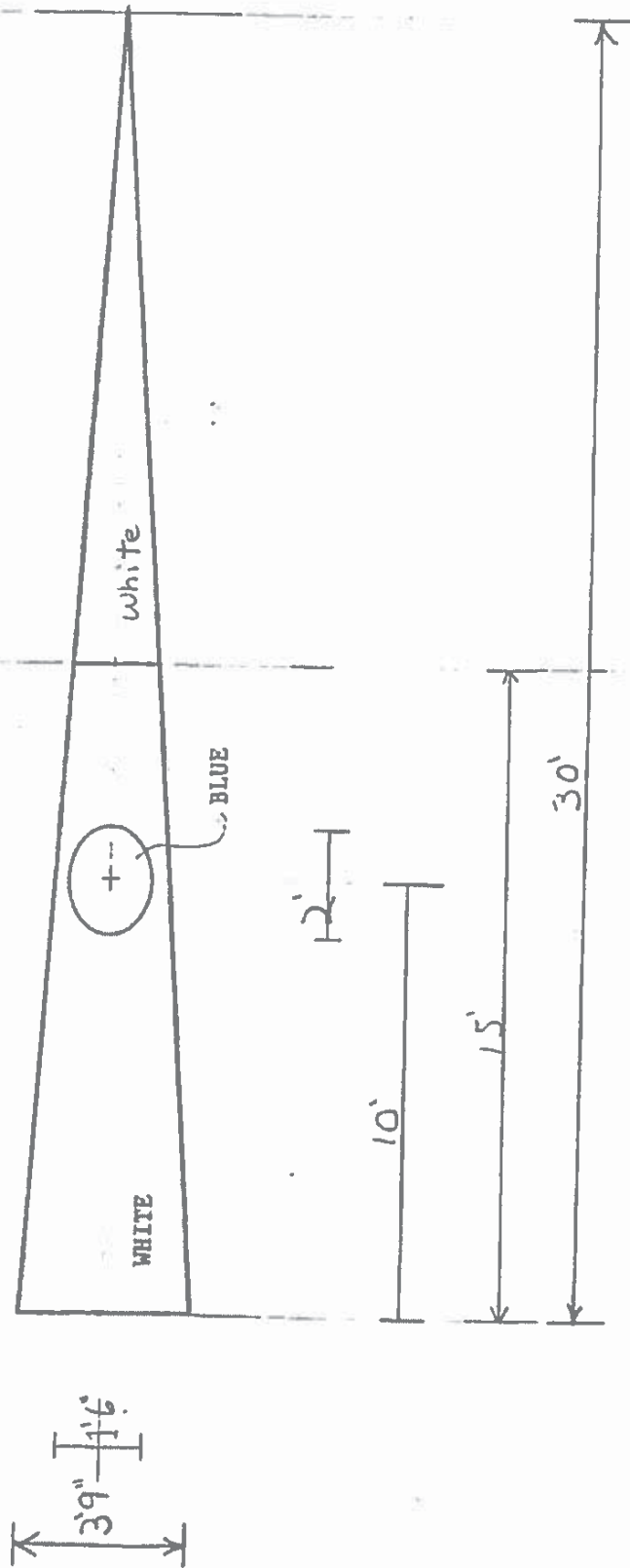
Drawing Title: *Transport*

Drawing Number:

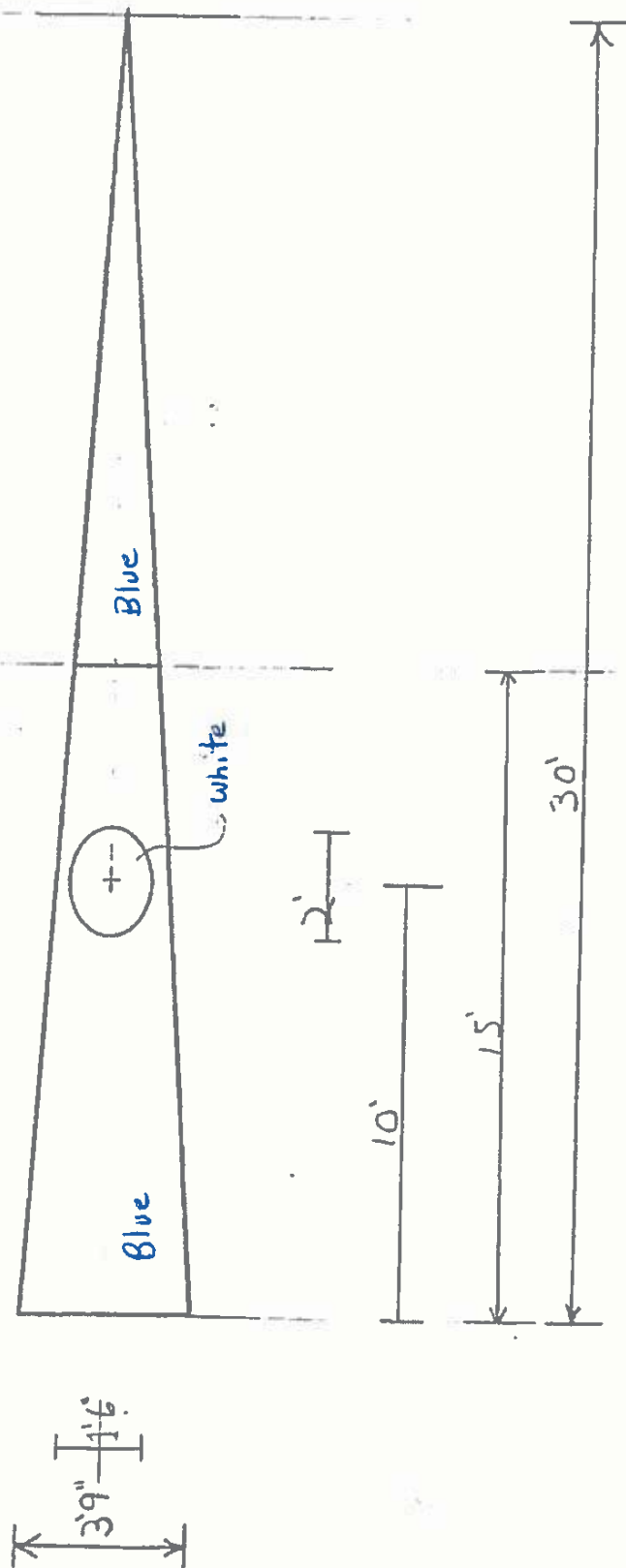
Responsible Officer: Scott Watson, ISO-HDC



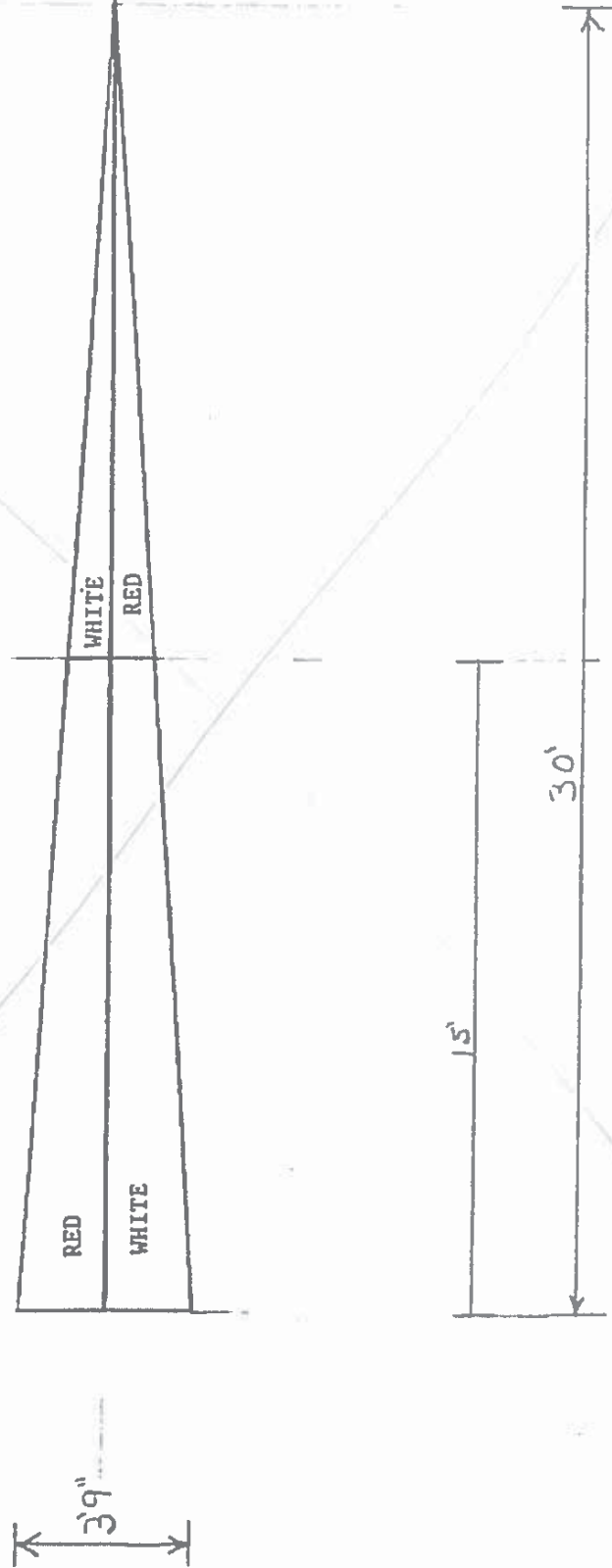
Drawn By: Matt Siemens Scale: 1/4 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: *Steamer*
Drawing Number: ..
Responsible Officer: Scott Watson, ISO-HDC



Drawn By: Matt Siemers Scale: 1/2 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flares
Drawing Title: Frigate
Drawing Number:
Responsible Officer: Scott Watson, ISO-HDC

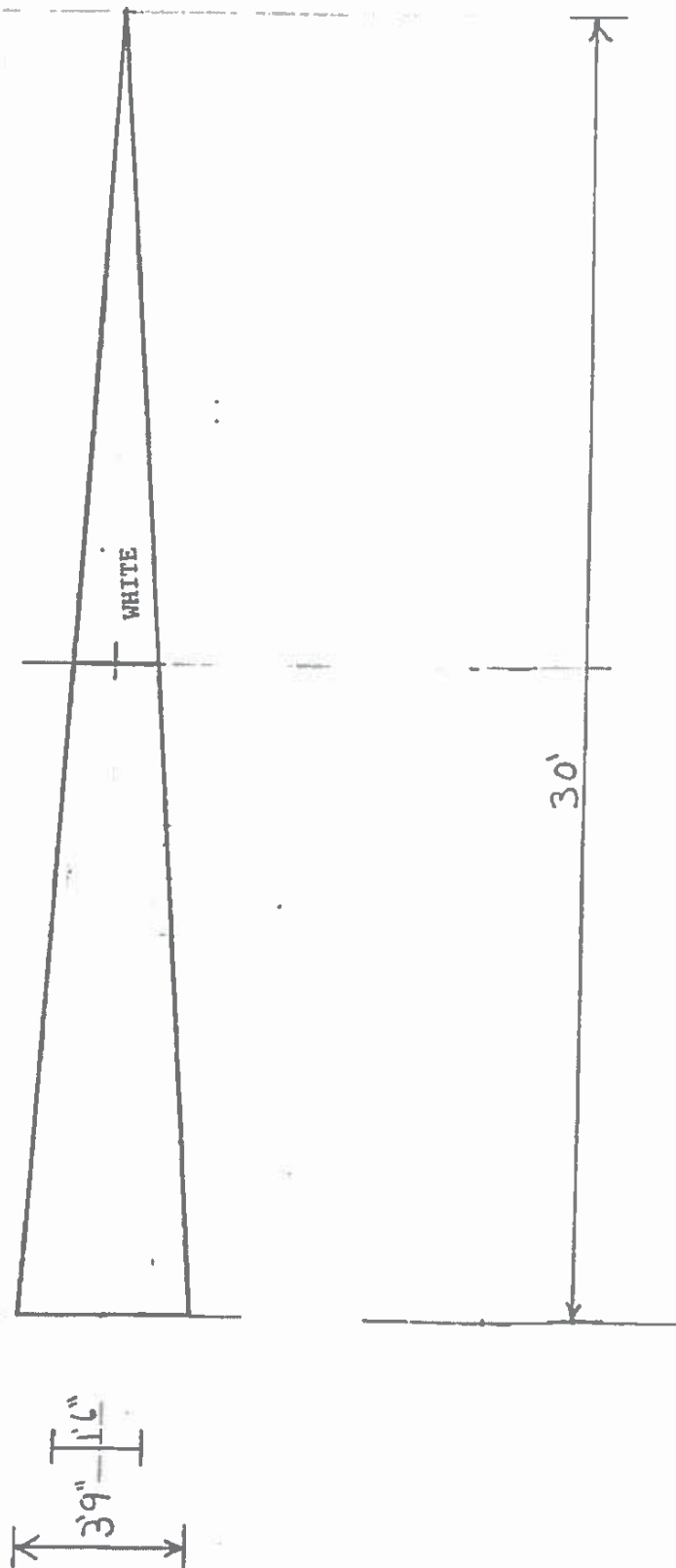


Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: Interrogative, Demand, and Penman
Drawing Number: P 6
Responsible Officer: Scott Watson, ISO-HDC

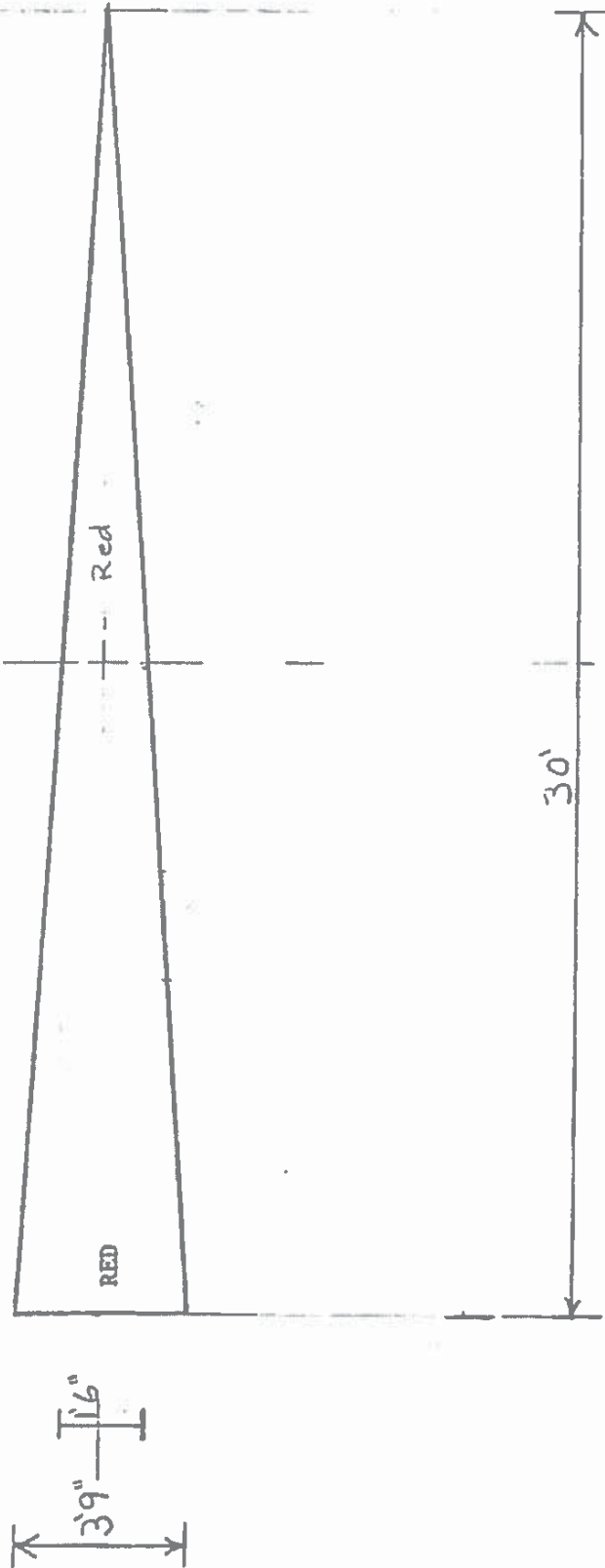


CH

Drawn by: Matt Siemens Scale: 1/4 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: *Schooner*
Drawing Number:
Responsible Officer: Scott Watson, ISO-HBC



Drawn By: Matt Siemers Scale: 1/4 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: *Brig*
Drawing Number:
Responsible Officer: Scott Watson, ISO-HDC



17

Drawn By: Matt Siemens Scale: 1/4 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: Blue
Drawing Number:
Responsible Officer: Scott Watson, ISO-HDC

3'9"

BLUE

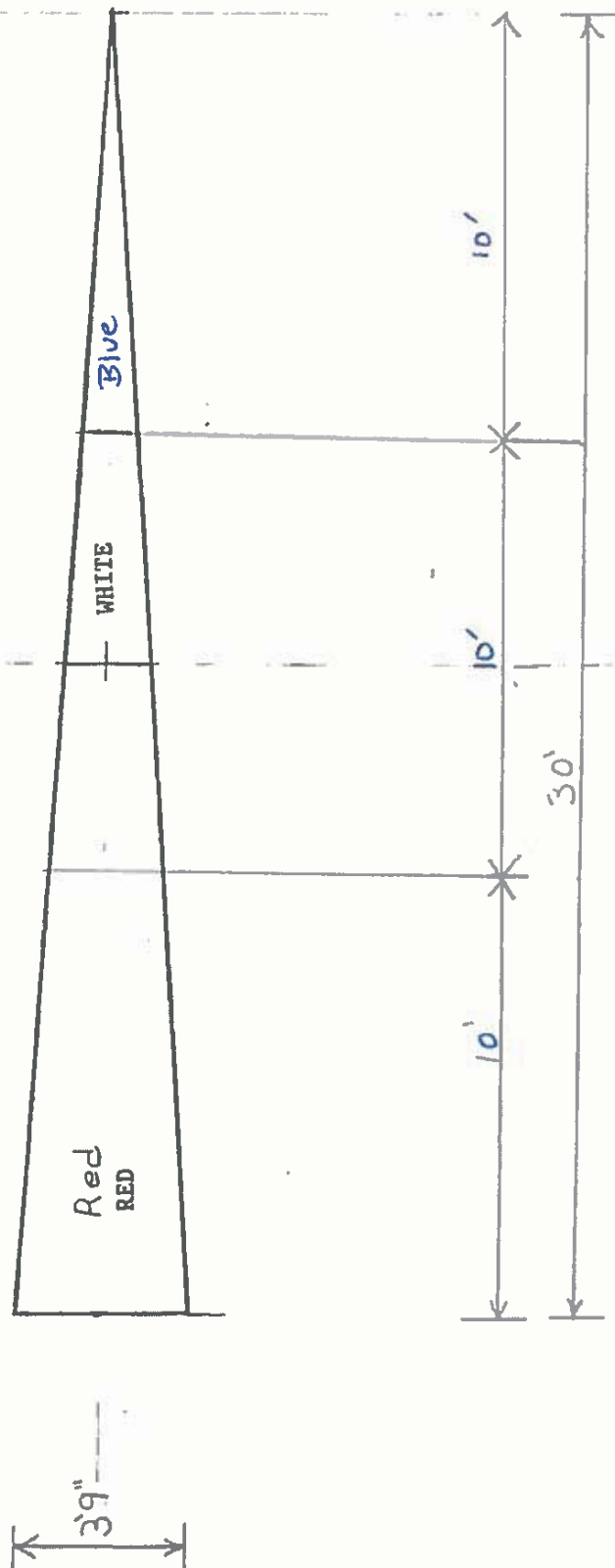
Blue

30'

7

7

Drawn By: Matt Siemers Scale: 1/4 inch
Design Based on Historic Chart
Project Title: Commercial Signal Flags
Drawing Title: *Enemy's Man of War*
Drawing Number:
Responsible Officer: Scott Watson, ISO-HDC



September 11, 2015

Mr. Chris Major
Senior Environmental Specialist
Public Works Government Services Canada
1713 Bedford Row,
Halifax, Nova Scotia, B3J 3C9

Subject: Commercial Mast Paint Sampling, Halifax Citadel Hill
Halifax Citadel National Historic Site, 5425 Sackville St, Halifax, NS
Our ref.: 20844

Dear Mr. Major:

At your request, Englobe Corp. (Englobe) has conducted lead-based paint sampling of the Commercial Mast at the Citadel National Historic Site located in Halifax NS. It was reported that the mast is scheduled for replacement and the purpose of the sampling was to determine if there is lead based paint on the mast prior to disposal and for contractor worker safety. The purpose of the survey was to summarize information on potential substances that could have an adverse effect on the environment (i.e. disposal) or individuals working at the site during the proposed removal of the mast.

Englobe personnel conducted the sampling on September 2, 2015.

Lead in Paint

In order to assess the concentrations of lead in painted materials on the mast, Englobe personnel collected one (1) sample from the painted commercial mast as directed as by Pierre Poirier while on-site. The paint sample consisted of paint plus substrate as the paint was well-adhered. Only one sample of the material was collected as it appeared to be visually similar the entire length of the mast.

The one (1) sample was collected and submitted to Maxxam Analytics in Bedford, NS for analysis of total lead content. The purpose of this sampling is to determine the handling and disposal requirements for the painted mast.

Results are compared to the *Nova Scotia Environment and Labour Guidelines for the Disposal of Contaminated Solids in Landfills* (March 22, 1994).

The lead paint results are provided in Table 1, below. A copy of the laboratory certificate of analysis is attached.

Table 1: Total Lead in Paint Results

SAMPLE NO.	SAMPLE LOCATION & DESCRIPTION	TOTAL LEAD (mg/kg)
P1	White paint and fibreglass substrate collected from the main course yard of the commercial mast (which was laying on the ground)	33
Disposal Guidelines ¹		1,000

¹ Nova Scotia Environment and Labour *Guidelines for Disposal of Contaminated Solids in Landfill* (March 22, 1994).

Handling of Lead-Based Paints

Any disturbance or removal of lead-based painted materials that may generate metals dust or respirable aerosols will need to conform to the federal and provincial *Occupational Health and Safety Act Regulations*.

All work should be carried out by individuals qualified to handle lead-containing materials and will require, as a minimum, workers to wear proper personal protection equipment.

Some of the Codes of Practice, Guidelines and Regulations pertaining to lead are given below:

- *Code of Practice for Working With Inorganic Lead*, June 2010
- *Working with Lead - An Information Package*, August 2001

As lead was detected in the sample, worker protection and precautions are required during the demolition of the mast to prevent generation of lead-laden dusts that could cause worker and neighbour exposure and property contamination.

Disposal of Lead-Based Paints

Disposal of lead-containing construction debris is regulated provincially by NSE. The landfill disposal limit for total lead in metals based paint is 1,000 mg/kg. If total lead levels exceed these limits, a leachate test is conducted. If the leachate concentration of lead is 5 mg/L or greater, then the waste material is considered a hazardous waste and will not be approved for disposal in a waste disposal site in this province.

Based on the total lead results, the paint sample from the commercial mast site satisfies the disposal guideline; this painted material does not require special consideration for disposal with respect to lead, and can be disposed of at an approved construction and demolition waste disposal site that will accept the waste.

Survey Limitations

This report was prepared for the exclusive use of Public Works Government Services Canada and is based on data and information obtained during site visit by Englobe and is based solely upon the condition of the property on the date of the site visit, supplemented by information obtained and described herein.

The evaluation and conclusions contained in this report have been prepared based on the expertise and experience of Englobe. In evaluating the site, Englobe has relied in good faith upon representation and information furnished by individuals noted in the report with respect to existing site conditions to the extent that they have not been contradicted by data obtained by other sources. Accordingly, Englobe accepts no responsibility for any deficiency or inaccuracy in this report as a result of omissions, misstatements or misrepresentations of the person(s) interviewed. In addition, Englobe will not accept liability for loss, injury, claim or damage arising from any use or reliance on this report as a result of misrepresentation or fraudulent information.

The sampling addresses the specified hazardous building materials only. It is possible that hazardous or regulated materials other than those mentioned in this report may be present.

The statements and conclusions presented in this report are professional opinions based upon data and information obtained during a survey by Englobe, visual observations made during the survey, and on interpretation of asbestos and paint laboratory analyses. The opinions in this report are given using generally accepted scientific judgment, principles, and practices; however, because of the inherent uncertainty in this process no guarantee of conclusion is intended or can be given.

Closing

We trust this is to your satisfaction. If, however, additional information should be required, please communicate with the undersigned.

Yours Truly,
Englobe Corp.

A handwritten signature in black ink, appearing to read 'E. Rogers', is written over a faint circular stamp.

Elizabeth Rogers, B.Tech(Env), CET
Project Manager, Environmental Engineering

Attachments

Your Project #: 20844
Your C.O.C. #: B 142148

Attention: Elizabeth Rogers-Patterson

Englobe Corp.
97 Troop Ave
Dartmouth, NS
CANADA B3B 2A7

Report Date: 2015/09/09
Report #: R3656029
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5H7054

Received: 2015/09/02, 11:00

Sample Matrix: Soil
Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Reference
	Quantity	Extracted			
Metals Bulk Acid Extr. ICPMS	1	2015/09/08	2015/09/09	ATL SOP 00058	EPA 6020A R1 m

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Avery Withrow, Project Manager

Email: AWithrow@maxxam.ca

Phone# (902)420-0203 Ext:233

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B5H7054
Report Date: 2015/09/09

Englobe Corp.
Client Project #: 20844
Sampler Initials: LT

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		AXL454	AXL454			
Sampling Date		2015/09/02	2015/09/02			
COC Number		B 142148	B 142148			
	UNITS	P1	P1 Lab-Dup	RDL	QC Batch	MDL
Metals						
Acid Extractable Lead (Pb)	mg/kg	33	29	5.0	4180835	N/A
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						
Lab-Dup = Laboratory Initiated Duplicate						
N/A = Not Applicable						

Maxxam Job #: B5H7054
Report Date: 2015/09/09

Englobe Corp.
Client Project #: 20844
Sampler Initials: LT

TEST SUMMARY

Maxxam ID: AXL454
Sample ID: P1
Matrix: Soil

Collected: 2015/09/02
Shipped:
Received: 2015/09/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Bulk Acid Extr. ICPMS	FICP/MS	4180835	2015/09/08	2015/09/09	Bryon Angevine

Maxxam ID: AXL454 Dup
Sample ID: P1
Matrix: Soil

Collected: 2015/09/02
Shipped:
Received: 2015/09/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Bulk Acid Extr. ICPMS	FICP/MS	4180835	2015/09/08	2015/09/09	Bryon Angevine

Maxxam Job #: B5H7054
Report Date: 2015/09/09

Englobe Corp.
Client Project #: 20844
Sampler Initials: LT

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	20.0°C
-----------	--------

Results relate only to the items tested.

Maxxam Job #: B5H7054
Report Date: 2015/09/09

Englobe Corp.
Client Project #: 20844
Sampler Initials: LT

QUALITY ASSURANCE REPORT

QA/QC				Date		%		
Batch	Init	QC Type	Parameter	Analyzed	Value	Recovery	UNITS	QC Limits
4180835	BAN	Matrix Spike(AXL454)	Acid Extractable Lead (Pb)	2015/09/09		NC	%	75 - 125
4180835	BAN	Spiked Blank	Acid Extractable Lead (Pb)	2015/09/09		102	%	75 - 125
4180835	BAN	Method Blank	Acid Extractable Lead (Pb)	2015/09/09	<5.0		mg/kg	
4180835	BAN	RPD - Sample/Sample Dup	Acid Extractable Lead (Pb)	2015/09/09	14		%	35

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

Client Stamp



200 Bluewater Road, Suite 105, Bedford, Nova Scotia B4B 1G8
40 Elizabeth Ave., St John's, NL A1A 1W9
90 Esplanade Sydney, NS B1P 1A1
www.maxxamanalytics.com

Tel: 902-420-0203 Fax: 902-420-8612 Toll Free: 1-800-565-7227
Tel: 709-754-0203 Fax: 709-754-8612 Toll Free: 1-888-402-7227
Tel: 902-597-1255 Fax: 902-593-8604 Toll Free: 1-888-535-7770
E-mail: ClientServices@maxxamanalytics.com

MAXXAM Chain of Custody Record

COC #: B 142148

Page 1 of 1

This column for lab use only:				INVOICE INFORMATION:				REPORT INFORMATION (if differs from invoice):				TURNAROUND TIME				
Client Code	Maxxam Job #	Company Name:	Contact Name:	Address:	Postal Code	City:	Province:	Company Name:	Contact Name:	Address:	Postal Code	City:	Province:	Standard	10 day	If RUSH Specify Date:
B5H7054		Englobe	Elizabeth Rogers	94 Treep Ave	B3B 2A7	Dart	NS	Englobe	Elizabeth Rogers	94 Treep Ave	B3B 2A7	Dart	NS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		Email: ELIZABETH.ROGERS@englobe.com		Fax: 468-6486		Phone: 468-6486		Email:		Fax:		Phone:		Pre-schedule rush work		
		Guideline Requirements / Detection Limits / Special Instructions						Metals & Mercury						Metals Total Digest - for Ocean		
		Save for leachate (possible leachate)						Metals Total Digest - for Ocean						Metals Total Digest - for Ocean		
		Homogenize sample						Metals Total Digest - for Ocean						Metals Total Digest - for Ocean		
		Date/Time Sampled						Metals Total Digest - for Ocean						Metals Total Digest - for Ocean		
		Matrix						Metals Total Digest - for Ocean						Metals Total Digest - for Ocean		
		Field Sample Identification						Metals Total Digest - for Ocean						Metals Total Digest - for Ocean		
		1 PI						Metals Total Digest - for Ocean						Metals Total Digest - for Ocean		
		2						Metals Total Digest - for Ocean						Metals Total Digest - for Ocean		
		3						Metals Total Digest - for Ocean						Metals Total Digest - for Ocean		
		4						Metals Total Digest - for Ocean						Metals Total Digest - for Ocean		
		5						Metals Total Digest - for Ocean						Metals Total Digest - for Ocean		
		6						Metals Total Digest - for Ocean						Metals Total Digest - for Ocean		
		7						Metals Total Digest - for Ocean						Metals Total Digest - for Ocean		
		8						Metals Total Digest - for Ocean						Metals Total Digest - for Ocean		
		9 B5H7054						Metals Total Digest - for Ocean						Metals Total Digest - for Ocean		
		10						Metals Total Digest - for Ocean						Metals Total Digest - for Ocean		

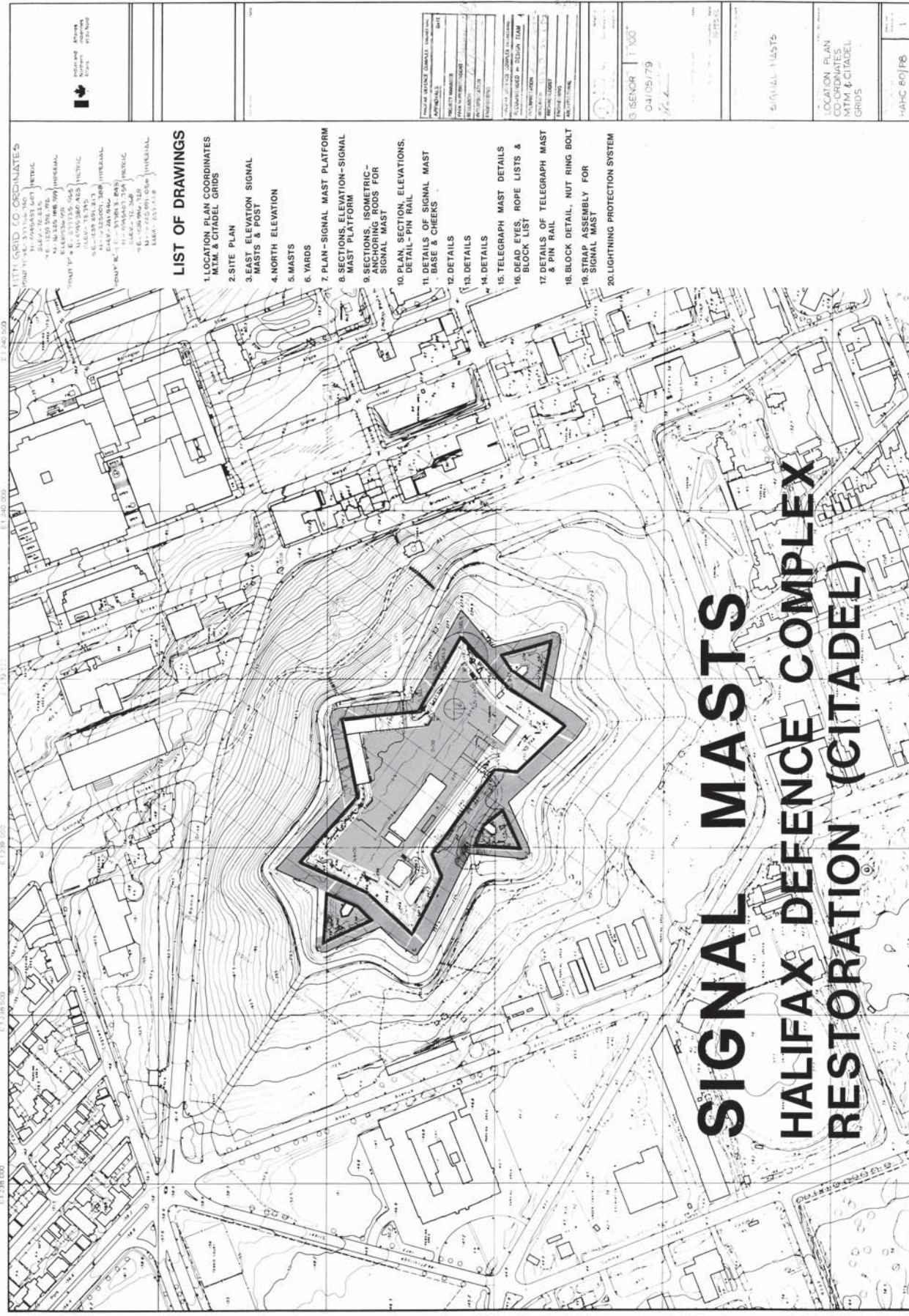
RECEIVED BY: (Signature/Print) *SEP 21 2015*

RECEIVED BY: (Signature/Print) *SEP 21 2015*

White: Maxxam

Yellow: Mail

Pink: Client



SIGNAL MASTS

HALIFAX DEFENCE COMPLEX


RESTORATION (CITADEL)

LIST OF DRAWINGS

1. LOCATION PLAN COORDINATES
M.M. & CHADEL GRIDS
2. SITE PLAN
3. EAST ELEVATION SIGNAL
MASTS & POST
4. NORTH ELEVATION
5. MASTS
6. YARDS
7. PLAN-SIGNAL MAST PLATFORM
8. SECTIONS, ELEVATION-SIGNAL
MAST PLATFORM
9. SECTIONS, ISOMETRIC-
ANCHORING ROOF FOR
SIGNAL MAST
10. PLAN, SECTION, ELEVATIONS,
DETAIL - PIN RAIL
11. DETAILS OF SIGNAL MAST
& BASE & CHRELS
12. DETAILS
13. DETAILS
14. DETAILS
15. TELEGRAPH MAST DETAILS
16. DEAD EYES, ROPE LISTS &
BLOCK LIST
17. DETAILS OF TELEGRAPH MAST
& PIN RAIL
18. BLOCK DETAIL, NUT RING BOLT
19. STRAP ASSEMBLY FOR
SIGNAL MAST
20. LIGHTNING PROTECTION SYSTEM

[illegible]



 Indian and Northern Affairs Canada Affaires indiennes et du Nord Canada		Date 1995-05-10	
Project Name EAST ELEVATION		Date 1995-05-10	
Project Number 1995-05-10		Date 1995-05-10	
Project Description EAST ELEVATION		Date 1995-05-10	
Project Location EAST ELEVATION		Date 1995-05-10	
Project Status EAST ELEVATION		Date 1995-05-10	
Project Contact EAST ELEVATION		Date 1995-05-10	
Project Notes EAST ELEVATION		Date 1995-05-10	
Project Attachments EAST ELEVATION		Date 1995-05-10	
Project Comments EAST ELEVATION		Date 1995-05-10	
Project History EAST ELEVATION		Date 1995-05-10	
Project Summary EAST ELEVATION		Date 1995-05-10	
Project Details EAST ELEVATION		Date 1995-05-10	
Project Conclusion EAST ELEVATION		Date 1995-05-10	
Project Recommendation EAST ELEVATION		Date 1995-05-10	
Project Approval EAST ELEVATION		Date 1995-05-10	
Project Implementation EAST ELEVATION		Date 1995-05-10	
Project Monitoring EAST ELEVATION		Date 1995-05-10	
Project Evaluation EAST ELEVATION		Date 1995-05-10	
Project Reporting EAST ELEVATION		Date 1995-05-10	
Project Archiving EAST ELEVATION		Date 1995-05-10	
Project Distribution EAST ELEVATION		Date 1995-05-10	
Project Access EAST ELEVATION		Date 1995-05-10	
Project Security EAST ELEVATION		Date 1995-05-10	
Project Privacy EAST ELEVATION		Date 1995-05-10	
Project Integrity EAST ELEVATION		Date 1995-05-10	
Project Confidentiality EAST ELEVATION		Date 1995-05-10	
Project Protection EAST ELEVATION		Date 1995-05-10	
Project Preservation EAST ELEVATION		Date 1995-05-10	
Project Continuity EAST ELEVATION		Date 1995-05-10	
Project Sustainability EAST ELEVATION		Date 1995-05-10	
Project Resilience EAST ELEVATION		Date 1995-05-10	
Project Adaptability EAST ELEVATION		Date 1995-05-10	
Project Inclusion EAST ELEVATION		Date 1995-05-10	
Project Participation EAST ELEVATION		Date 1995-05-10	
Project Collaboration EAST ELEVATION		Date 1995-05-10	
Project Partnership EAST ELEVATION		Date 1995-05-10	
Project Alliance EAST ELEVATION		Date 1995-05-10	
Project Coalition EAST ELEVATION		Date 1995-05-10	
Project Consortium EAST ELEVATION		Date 1995-05-10	
Project Network EAST ELEVATION		Date 1995-05-10	
Project Community EAST ELEVATION		Date 1995-05-10	
Project Society EAST ELEVATION		Date 1995-05-10	
Project Culture EAST ELEVATION		Date 1995-05-10	
Project Values EAST ELEVATION		Date 1995-05-10	
Project Beliefs EAST ELEVATION		Date 1995-05-10	
Project Attitudes EAST ELEVATION		Date 1995-05-10	
Project Behaviors EAST ELEVATION		Date 1995-05-10	
Project Norms EAST ELEVATION		Date 1995-05-10	
Project Standards EAST ELEVATION		Date 1995-05-10	
Project Guidelines EAST ELEVATION		Date 1995-05-10	
Project Procedures EAST ELEVATION		Date 1995-05-10	
Project Policies EAST ELEVATION		Date 1995-05-10	
Project Plans EAST ELEVATION		Date 1995-05-10	
Project Strategies EAST ELEVATION		Date 1995-05-10	
Project Tactics EAST ELEVATION		Date 1995-05-10	
Project Techniques EAST ELEVATION		Date 1995-05-10	
Project Tools EAST ELEVATION		Date 1995-05-10	
Project Materials EAST ELEVATION		Date 1995-05-10	
Project Equipment EAST ELEVATION		Date 1995-05-10	
Project Supplies EAST ELEVATION		Date 1995-05-10	
Project Services EAST ELEVATION		Date 1995-05-10	
Project Personnel EAST ELEVATION		Date 1995-05-10	
Project Roles EAST ELEVATION		Date 1995-05-10	
Project Responsibilities EAST ELEVATION		Date 1995-05-10	
Project Tasks EAST ELEVATION		Date 1995-05-10	
Project Activities EAST ELEVATION		Date 1995-05-10	
Project Events EAST ELEVATION		Date 1995-05-10	

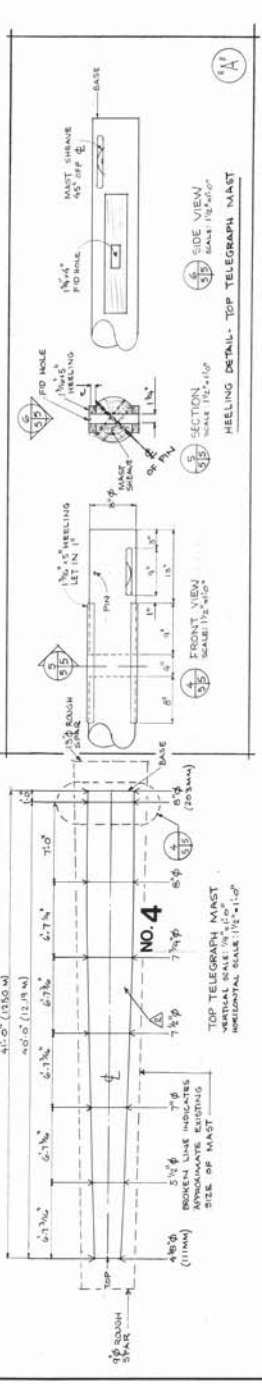
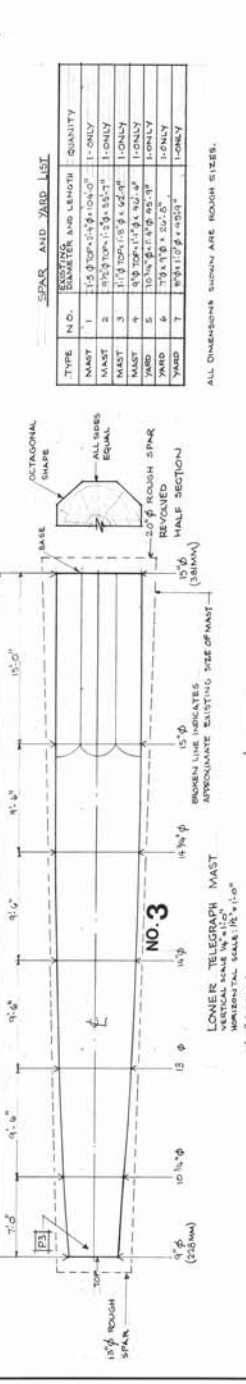
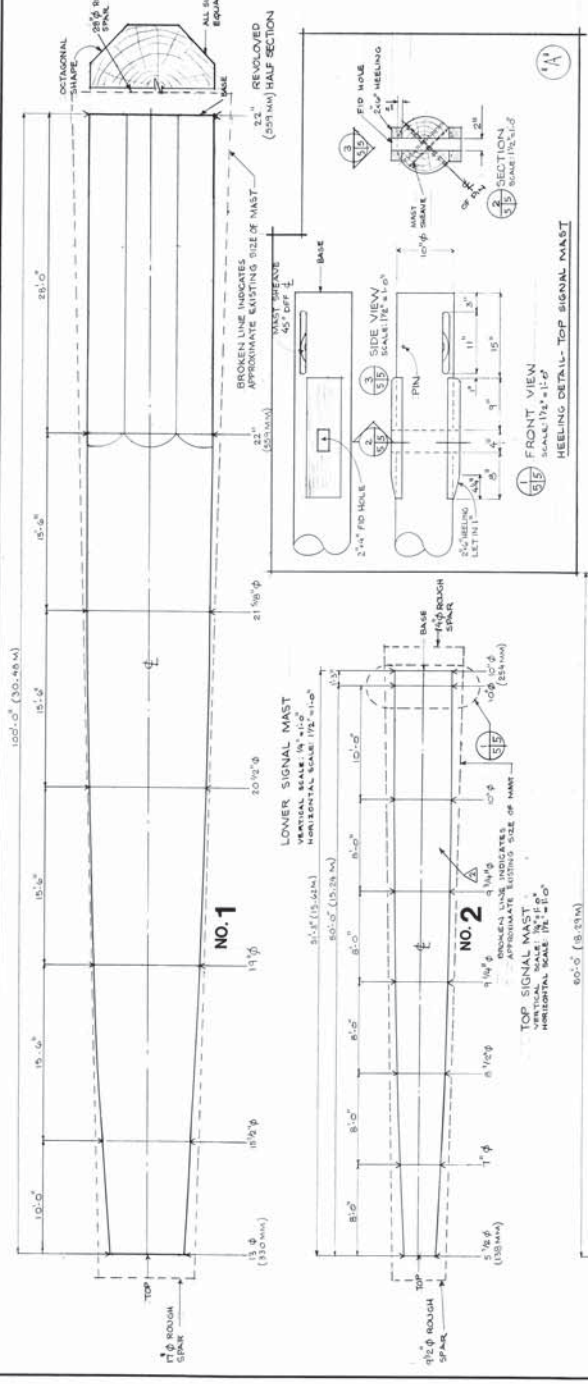
GENERAL NOTES:
 (1) SPARS ARE SHAPED FROM
 SQUARES OR RECTANGLES
 ONE PIECE NO LAMINATIONS



Notes and
 drawings
 are to be
 made
 in
 accordance
 with
 the
 instructions
 of the
 Chief
 Engineer

(2) MAST AND YARD DESIGN BASED UPON
 ENCHRONOLOGICAL ELEVATION OF 1850
 BY CHARLES BURKE.
 (3) P50 REPORT BY R.H. DONALD
 ON BRITISH SIGNAL ESTABLISHMENTS.
 INFORMATION PRESENTED FROM
 OTTAWA, MANITOBA, SASKATCHEWAN
 (4) RESEARCH AND INTERPRETATION
 OF HISTORICAL PHOTOGRAPHS BY
 NATIONAL CANAL DESIGN TEAM.

(5) ALL DIMENSIONS ARE GIVEN EQUI-
 DISTANCE FROM CENTER LINE.



SPAR AND YARD LIST

TYPE	N.O.	DIAMETER	LENGTH	QUANTITY
MAST	1	1 1/2" DIA. TOP 1/2" DIA. BOTTOM	10'-0"	1-ONLY
MAST	2	1 1/2" DIA. TOP 1 1/2" DIA. BOTTOM	10'-0"	1-ONLY
MAST	3	1 1/2" DIA. TOP 1 1/2" DIA. BOTTOM	10'-0"	1-ONLY
MAST	4	1 1/2" DIA. TOP 1 1/2" DIA. BOTTOM	10'-0"	1-ONLY
MAST	5	1 1/2" DIA. TOP 1 1/2" DIA. BOTTOM	10'-0"	1-ONLY
MAST	6	1 1/2" DIA. TOP 1 1/2" DIA. BOTTOM	10'-0"	1-ONLY
MAST	7	1 1/2" DIA. TOP 1 1/2" DIA. BOTTOM	10'-0"	1-ONLY

NOTE
 SPARS OF 1850 WERE NOT MET
 AT THE TIME

ALL DIMENSIONS SHOWN ARE ROUGH SIZES.

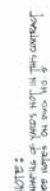
APPROVALS

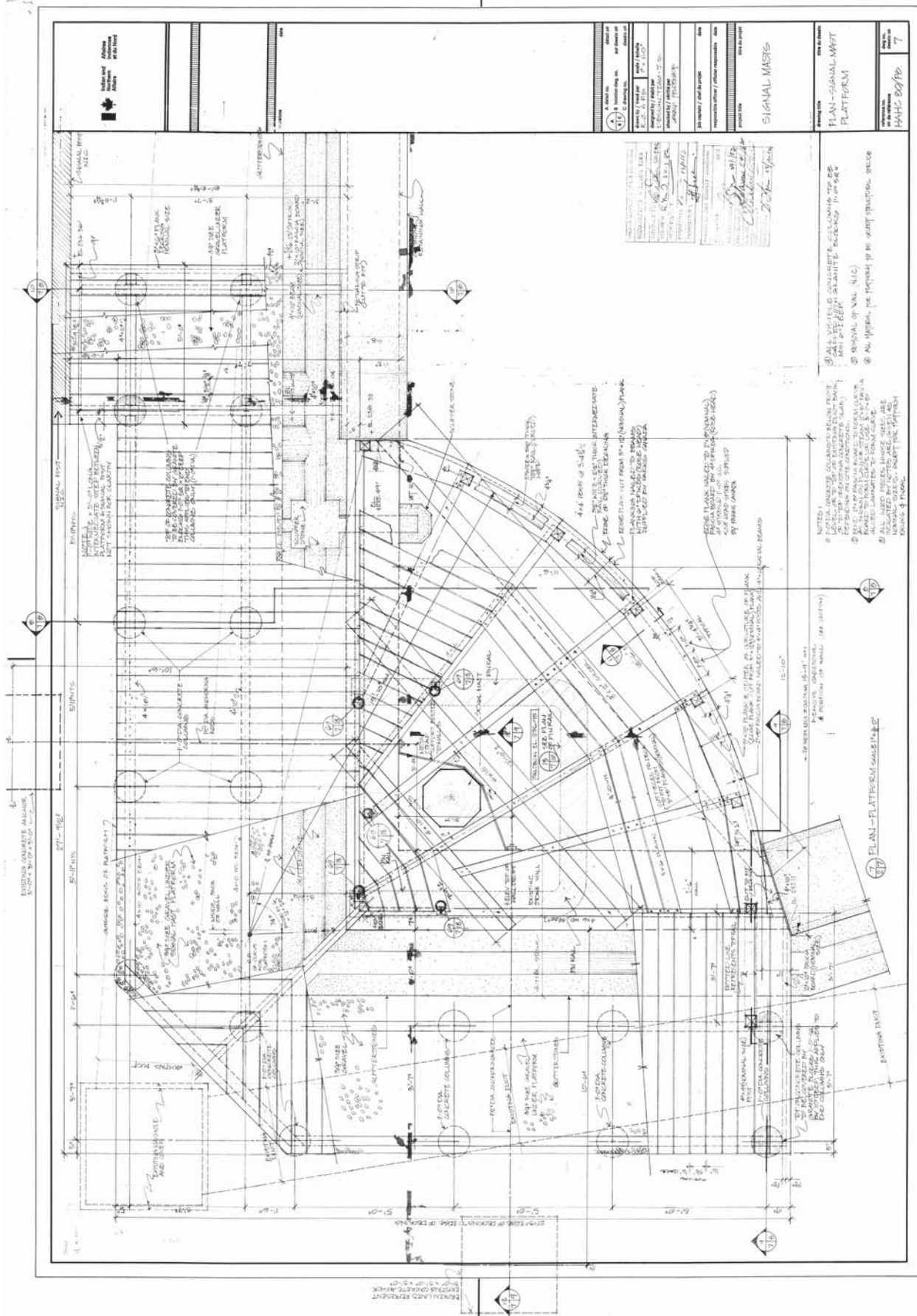
DESIGNED BY: [Signature]
 CHECKED BY: [Signature]
 DRAWN BY: [Signature]
 DATE: [Date]

SIGNAL MASTS

MASTS

HAIRC 80/PS 5



[illegible]

Indian and
Malay
Architecture
Notes

Scale	1/4" = 1'-0"
Notes	

Project Name	Signal Mast
Project No.	100-100
Project Date	10/1/10
Project Location	100-100
Project Description	Signal Mast

Project Name	Signal Mast
Project No.	100-100
Project Date	10/1/10
Project Location	100-100
Project Description	Signal Mast

Project Name	Signal Mast
Project No.	100-100
Project Date	10/1/10
Project Location	100-100
Project Description	Signal Mast

Project Name	Signal Mast
Project No.	100-100
Project Date	10/1/10
Project Location	100-100
Project Description	Signal Mast

Project Name	Signal Mast
Project No.	100-100
Project Date	10/1/10
Project Location	100-100
Project Description	Signal Mast

Project Name	Signal Mast
Project No.	100-100
Project Date	10/1/10
Project Location	100-100
Project Description	Signal Mast

Project Name	Signal Mast
Project No.	100-100
Project Date	10/1/10
Project Location	100-100
Project Description	Signal Mast

Project Name	Signal Mast
Project No.	100-100
Project Date	10/1/10
Project Location	100-100
Project Description	Signal Mast

