

**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

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

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

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

---

# INVITATION À SOUMISSIONNER

## TABLE DES MATIÈRES

### INSTRUCTIONS PARTICULIÈRES AUX SOUMISSIONNAIRES (IP)

IP01	Disposition relatives à l'intégrité - Déclaration de condamnation à une infraction
IP02	Documents de soumission
IP03	Demandes de renseignements pendant l'appel d'offres
IP04	Visite
IP05	Révision des soumissions
IP06	Résultats de l'appel d'offres
IP07	Fonds insuffisants
IP08	Période de validité des soumissions
IP09	Documents de construction
IP10	Exigences relatives à la sécurité
IP11	Initiative de Travaux publics et Services gouvernementaux Canada pour l'embauche d'apprentis
IP12	Sites Web

### R2710T INSTRUCTIONS GÉNÉRALES - SERVICES DE CONSTRUCTION - EXIGENCES RELATIVES À LA GARANTIE DE SOUMISSION (IG) (2015-07-03)

Les articles suivants de la clause R2710T sont reproduits sur le site Web <https://achatsetventes.gc.ca/politiques-et-lignes-directrices/guide-des-clauses-et-conditions-uniformisees-d-achat/5/R>

IG01	Dispositions relatives à l'intégrité - soumission
IG02	La soumission
IG03	Identité ou capacité civile du soumissionnaire
IG04	Taxes applicables
IG05	Frais d'immobilisation
IG06	Immatriculation et évaluation préalable de l'outillage flottant
IG07	Liste des sous-traitants et fournisseurs
IG08	Exigences relatives à la garantie de soumission
IG09	Livraison des soumissions
IG10	Révision des soumissions
IG11	Rejet de la soumission
IG12	Coûts relatifs aux soumissions
IG13	Numéro d'entreprise – approvisionnement
IG14	Respect des lois applicables
IG15	Approbation des matériaux de remplacement
IG16	Évaluation du rendement
IG17	Conflit d'intérêts / Avantage indus.

### CONDITIONS SUPPLÉMENTAIRES (CS)

CS01	Limitation de la responsabilité
CS02	Condition d'assurance

### DOCUMENTS DU CONTRAT (DC)

### FORMULAIRE DE SOUMISSION ET D'ACCEPTATION (SA)

SA01	Identification du projet
SA02	Nom commercial et adresse du soumissionnaire
SA03	Offre
SA04	Période de validité des soumissions
SA05	Acceptation et contrat
SA06	Durée des travaux
SA07	Garantie de soumission
SA08	Signature

**APPENDICE 1- DISPOSTION RELATIVES À L'INTÉGRITÉ-LISTE DE NOMS**  
**APPENDICE 2 - ATTESTATION VOLONTAIRE À L'APPUI DU RECOURS AUX APPRENTIS**  
**APPENDICE 3 – POUVOIRS DU REPRÉSENTANT DU MINISTÈRE**  
**ANNEXE A – ATTESTATION D'ASSURANCE**  
**ANNEXE B- RAPPORT VOLONTAIRE D'APPRENTIS EMPLOYÉS PENDANT LES CONTRATS**

## INSTRUCTIONS PARTICULIÈRES AUX SOUMISSIONNAIRES (IP)

### IP01 DISPOSITIONS RELATIVES À L'INTEGRITE - DÉCLARATION DE CONDAMNATION À UNE INFRACTION

Conformément à la Déclaration de condamnation à une infraction, du paragraphe 10 (copié ci-dessous) des Instructions Générales **R2710T**, le soumissionnaire doit, selon le cas, présenter avec sa soumission le [Formulaire de déclaration](#) dûment rempli afin que sa soumission ne soit pas rejetée du processus d'approvisionnement.

#### Déclaration de condamnation à une infraction

*Lorsqu'un soumissionnaire ou ses affiliés ne sont pas en mesure d'attester qu'ils n'ont pas été déclarés coupable de toute infraction indiquée aux paragraphes Infractions commises au Canada entraînant une incapacité légale, Infractions commises au Canada, Infractions commises à l'étranger, le soumissionnaire doit remplir le [Formulaire de déclaration](#), qui doit être présenté avec sa soumission afin que celle-ci ne soit pas rejetée du processus d'approvisionnement.*

### IP02 DOCUMENTS DE SOUMISSION

1. Les documents suivants constituent les documents de soumission:
  - a. Appel d'offres - Page 1;
  - b. Instructions particulières aux soumissionnaires  
Instructions générales – services de construction – exigences relatives à la garantie de soumission R2710T (2015-07-03)
  - c. Clauses et conditions identifiées aux "Documents du contrat";
  - d. Dessins et devis;
  - e. Formulaire de soumission et d'acceptation et tout appendice s'y rattachant; et
  - f. Toute modification émise avant la clôture de l'invitation.

La présentation d'une soumission constitue une affirmation que le soumissionnaire a lu ces documents et accepte les modalités qui y sont énoncées.

2. Les Instructions générales - Services de construction - Exigences relatives à la garantie de soumission R2710T sont incorporées par renvoi et reproduites dans le Guide des clauses et conditions uniformisées d'achat (CCUA) publié par Travaux publics et Services gouvernementaux Canada (TPSGC). Le guide des CCUA est disponible sur le site Web de TPSGC: <https://achatsetventes.gc.ca/politiques-et-lignes-directrices/guide-des-clauses-et-conditions-uniformisees-d-achat/5/R>

### IP03 DEMANDES DE RENSEIGNEMENTS PENDANT L'APPEL D'OFFRES

1. Toute demande de renseignements sur l'appel d'offres doit être présentée par écrit à l'agent d'approvisionnement dont le nom figure à l'Appel d'offres - Page 1, et ce le plus tôt possible pendant la durée de l'invitation. À l'exception de l'approbation de matériaux de remplacement, comme cela est décrit à l'IG15 de la R2710T toutes les autres demandes de renseignements devraient être reçues au moins **cinq (5) jours** civils avant la date de clôture de l'invitation afin de laisser suffisamment de temps pour y répondre. Pour ce qui est des demandes de renseignements reçues après cette date, il est possible qu'on ne puisse y répondre.
2. Pour assurer la cohérence et la qualité de l'information fournie aux soumissionnaires, l'agent d'approvisionnement examinera le contenu de la demande de renseignements et décidera s'il convient ou non de publier une modification.
3. Toutes les demandes de renseignements et autres communications envoyées avant la clôture de l'appel d'offres doivent être adressées UNIQUEMENT à l'agent d'approvisionnement dont le nom figure à l'Appel d'offres - Page 1. Le défaut de se conformer à cette exigence pourrait avoir pour conséquence que la soumission soit déclarée non recevable.

#### **IP04 VISITE DES LIEUX**

Il y aura une visite des lieux le 8 October à 1400hrs. La porte principale

#### **IP05 RÉVISION DES SOUMISSIONS**

Une soumission peut être révisée par lettre ou par télécopie conformément à l'IG10 de la R2710T. Le numéro du télécopieur pour la réception de révisions est le **902.496.5016**

#### **IP06 RÉSULTATS DE L'APPEL D'OFFRES**

1. Un dépouillement public des soumissions aura lieu au bureau désigné sur la page frontispice «Appel d'offres» pour la réception des soumissions, peu de temps après l'heure indiquée pour la clôture des soumissions.
2. Après la date de clôture pour la réception des soumissions, on peut demander les résultats de l'appel d'offres en communiquant au numéro de **902.496.5001**

#### **IP07 FONDS INSUFFISANTS**

Si la soumission conforme la plus basse dépasse le montant des fonds alloués par le Canada pour les travaux, le Canada pourra

- a. annuler l'appel d'offres; ou
- b. obtenir des fonds supplémentaires et attribuer le contrat au soumissionnaire ayant présenté la soumission conforme la plus basse; et/ou
- c. négocier une réduction maximale de 15% du prix offert et/ou de la portée des travaux avec le soumissionnaire ayant présenté la soumission conforme la plus basse. Si le Canada n'arrive pas à une entente satisfaisante, il exercera l'option a) ou b).

#### **IP08 PÉRIODE DE VALIDITÉ DES SOUMISSIONS**

1. Le Canada se réserve le droit de demander une prorogation de la période de validité des soumissions tel que précisé à la SA04 du Formulaire de soumission et d'acceptation. Dès réception d'un avis écrit du Canada, les soumissionnaires auront le choix d'accepter ou de refuser la prorogation proposée.
2. Si la prorogation mentionnée à l'alinéa 1. de l'IP08 est acceptée par écrit par tous les soumissionnaires qui ont présenté une soumission, le Canada poursuivra alors sans tarder l'évaluation des soumissions et les processus d'approbation.
3. Si la prorogation mentionnée à l'alinéa 1. de l'IP08 n'est pas acceptée par écrit par tous les soumissionnaires qui ont présenté une soumission, le Canada pourra alors, à sa seule discrétion,
  - a) poursuivre l'évaluation des soumissions de ceux qui auront accepté la prorogation proposée et obtenir les approbations nécessaires; ou
  - b) annuler l'appel d'offres.
4. Les conditions exprimées dans les présentes ne limitent d'aucune façon les droits du Canada définis dans la loi ou en vertu de l'IG11 de R2710T

#### **IP09 DOCUMENTS DE CONSTRUCTION**

À l'attribution du contrat, **une** copie papier des dessins signés et scellés, du devis et des modifications sera fournie à l'entrepreneur retenu. Il incombera à l'entrepreneur d'obtenir les autres exemplaires dont il peut avoir besoin et, le cas échéant, d'en assurer les coûts.

## IP10 INITIATIVE DE TRAVAUX PUBLICS ET SERVICES GOUVERNEMENTAUX CANADA POUR L'EMBAUCHE D'APPRENTIS

1. Pour les encourager à participer à la formation d'apprentis, on demande aux employeurs qui soumissionnent pour des contrats de construction ou d'entretien de Travaux publics et Services gouvernementaux Canada (TPSGC) de signer une attestation volontaire, attestation signalant leur engagement à embaucher et former des apprentis.
2. Le Canada doit composer avec des pénuries de main-d'œuvre dans divers secteurs et dans diverses régions, en particulier dans des métiers spécialisés. Faciliter l'acquisition de compétences et la formation chez les Canadiens est une responsabilité partagée. Dans le Plan d'action économique (PAE) de 2013, le gouvernement du Canada a pris l'engagement de faciliter l'utilisation d'apprentis dans le cadre des contrats fédéraux de construction et d'entretien. Les soumissionnaires ont un rôle important à jouer au titre du soutien des apprentis, à savoir les embaucher et les former. On les encourage à attester qu'ils proposent des possibilités d'emploi à des apprentis dans le cadre de leurs relations d'affaires avec le gouvernement du Canada.
3. Par l'entremise du Plan d'action économique de 2013 et de son appui aux programmes de formation, le gouvernement du Canada encourage les Canadiens à faire l'apprentissage de métiers spécialisés et à y faire carrière. En outre, le gouvernement offre un crédit d'impôt aux employeurs afin de les encourager à embaucher des apprentis. Vous trouverez de l'information à propos de ces mesures fiscales administrées par l'Agence du revenu du Canada dans son site Web à : [www.cra-arc.gc.ca](http://www.cra-arc.gc.ca). Les employeurs sont aussi invités à se renseigner à propos de l'information et des mesures de soutien additionnelles dont ils pourraient tirer profit auprès de leur autorité provinciale ou territoriale en matière d'apprentissage.
4. Les attestations signées (APPENDICE 4) aideront à mieux comprendre comment les entrepreneurs utilisent des apprentis dans le cadre de contrats fédéraux de construction et d'entretien et pourraient éclairer l'élaboration, dans l'avenir, de nouvelles politiques et de nouveaux programmes.
5. L'entrepreneur atteste ce qui suit :

En vue de contribuer à la satisfaction de la demande en travailleurs qualifiés, l'entrepreneur convient de déployer et d'exiger de ses sous-traitants qu'ils déploient des efforts commerciaux raisonnables pour embaucher et former des apprentis inscrits, de s'efforcer d'utiliser pleinement les ratios compagnon/apprenti \* autorisés et de respecter toutes les exigences liées à l'embauche prescrites dans les lois provinciales et territoriales.

L'entrepreneur consent, par la présente, à ce que cette information soit recueillie et conservée par TPSGC et Emploi et Développement social Canada en vue d'appuyer la compilation de données sur l'embauche et la formation d'apprentis dans le cadre de contrats fédéraux de construction et d'entretien.

Pour appuyer cette initiative, une attestation volontaire signalant que le fournisseur s'engage à embaucher et former des apprentis est disponible à l'APPENDICE 4.

Si vous acceptez, veuillez compléter et apposer votre signature à l'APPENDICE 4

*\* Le ratio compagnon/apprenti, c'est le nombre de compagnons qualifiés/agrérés qu'un employeur doit employer dans une profession ou un métier désigné afin d'être admissible à inscrire un apprenti conformément à la législation, aux règlements, aux directives d'orientation ou aux arrêtés provinciaux/territoriaux émis par les autorités ou les organismes responsables.*

## IP12 SITES WEB

La connexion à certains des sites Web se trouvant aux documents d'appel d'offres est établie à partir d'hyperliens. La liste suivante énumère les adresses de ces sites Web.

Appendice L du Conseil du Trésor, Compagnies de cautionnement reconnues

<http://www.tbs-sct.gc.ca/pol/doc-fra.aspx?id=14494&section=text#appl>

Achats et ventes <https://achatsetventes.gc.ca/>

Sanctions économiques canadiennes <http://www.international.gc.ca/sanctions/index.aspx?lang=fra>

Rapport d'évaluation du rendement de l'entrepreneur (Formulaire PWGSC-TPSGC 2913)

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

Cautionnement de soumission (formulaire PWGSC-TPSGC 504)

<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/504.pdf>

Cautionnement d'exécution (formulaire PWGSC-TPSGC 505)

<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/505.pdf>

Cautionnement pour le paiement de la main-d'œuvre et des matériaux (formulaire PWGSC-TPSGC 506)

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

Guide des clauses et conditions uniformisées d'achats (CCUA) <https://achatsetventes.gc.ca/politiques-et-lignes-directrices/guide-des-clauses-et-conditions-uniformisees-d-achat/5/R>

Services de sécurité industrielle <http://ssi-iss.tpsgc-pwgsc.gc.ca/index-fra.html>

TPSGC, Code de conduite pour l'approvisionnement <http://www.tpsgc-pwgsc.gc.ca/app-acq/cndt-cndct/contexte-context-fra.html>

TPSGC, Formulaires relatifs à l'administration des contrats de construction et de services d'experts-conseils

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

Formulaire de déclaration

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

## **CONDITIONS SUPPLÉMENTAIRES (CS)**

### **CS02 LIMITATION DE LA RESPONSABILITÉ**

La CG1.6 de la R2810D est supprimée et remplacée par le texte suivant:

CG1.6 Indemnisation par l'entrepreneur

1. L'entrepreneur exonère et indemnise le Canada des réclamations, demandes d'indemnisation, pertes, frais, dommages, actions, poursuites ou procédures se rapportant aux pertes subies par le Canada ou aux réclamations de tierces parties et découlant, de quelque façon que ce soit, des activités de l'entrepreneur dans l'exécution des travaux, dans la mesure où ces réclamations sont causées par des actes négligents ou délibérés ou des omissions attribuables à l'entrepreneur, ou à quiconque dont il est responsable en vertu de la loi.
2. L'obligation de l'entrepreneur d'indemniser le Canada pour chacune des pertes liées à la responsabilité de première partie est limitée comme suit :
  - a) en ce qui a trait à chacune des pertes pour lesquelles une assurance doit être fournie en vertu des exigences en assurance du contrat, elle est limitée au plafond par sinistre, de l'assurance responsabilité civile des entreprises, comme il est indiqué aux exigences en assurance du contrat.
  - b) en ce qui a trait aux pertes pour lesquelles aucune assurance n'est requise, en vertu des exigences en assurance du contrat, elle est limitée au montant le plus élevé entre le montant du contrat et 5,000,000\$, mais en aucun cas le montant ne doit être supérieur à 20,000,000\$.

Les montants ci-dessus ne comprennent pas les intérêts ni les frais de justice et ne sont applicables à aucune violation des droits de propriété intellectuelle ou des obligations de garantie.

3. L'obligation de l'entrepreneur d'indemniser le Canada, pour des pertes liées à la responsabilité de tierces parties n'est assujettie à aucune limite, y compris la totalité des frais qu'il devra engager pour se défendre en cas de poursuite par une tierce partie. Lorsque le Canada l'exige, l'entrepreneur doit défendre le Canada contre toute réclamation présentée par une tierce partie.
4. L'entrepreneur acquitte l'ensemble des redevances et des droits de brevet nécessaires à l'exécution du contrat et assume à ses frais la défense du Canada contre toutes les réclamations, actions ou procédures déposées ou intentées contre le Canada et alléguant que les travaux, ou toute partie de ceux-ci, réalisés ou fournis par l'entrepreneur pour le Canada portent atteinte à des brevets, modèles industriels, droits d'auteur, marques de commerce, secrets industriels ou autres droits de propriété susceptibles d'exécution au Canada.
5. Un avis écrit d'une réclamation doit être donné dans un délai raisonnable après que les faits sur lesquels est fondée cette demande deviennent connus.

### **CS03 CONDITIONS D'ASSURANCE**

- 1) Polices d'assurance
  - a) L'entrepreneur souscrit et maintient, à ses propres frais, les polices d'assurance conformément aux exigences de l'Attestation d'assurance. L'assurance doit être souscrite auprès d'un assureur autorisé à faire affaire au Canada.
  - b) Le respect des exigences en matière d'assurance ne dégage pas l'entrepreneur de sa responsabilité en vertu du contrat, ni ne la diminue. L'entrepreneur est responsable de décider si une assurance supplémentaire est nécessaire pour remplir ses obligations en vertu du contrat et pour se conformer aux lois applicables. Toute assurance supplémentaire souscrite est à la charge de l'entrepreneur ainsi que pour son bénéfice et sa protection.
- 2) Période d'assurance
  - a) Les polices exigées à l'Attestation d'assurance doivent prendre effet le jour de l'attribution du contrat et demeurer en vigueur pendant toute la durée du contrat.

- b) Il incombe à l'entrepreneur de fournir et de maintenir la couverture pour produits/travaux complétés de sa police d'assurance responsabilité civile des entreprises et ce pour un délai minimum de (6) six ans suivant la date du Certificat d'achèvement substantiel.

3) Preuve d'assurance

- a) Avant le début des travaux, et au plus tard trente (30) jours après l'acceptation de sa soumission, l'entrepreneur doit remettre au Canada une Attestation d'assurance sur le formulaire fournis.
- b) À la demande du Canada, l'entrepreneur doit fournir les originaux ou les copies certifiées de tous les contrats d'assurance auxquels l'entrepreneur a souscrit conformément à l'Attestation d'assurance.

4) Indemnités d'assurance

En cas de sinistre, l'entrepreneur doit faire sans délai toutes choses et exécuter tous documents requis pour le paiement de l'indemnité d'assurance.

5) Franchise

L'entrepreneur doit assumer le paiement de toutes sommes d'argent en règlement d'un sinistre, jusqu'à concurrence de la franchise.

## DOCUMENTS DU CONTRAT (DC)

1. Les documents suivants constituent le contrat:
  - a. Page « Contrat » une fois signée par le Canada;
  - b. Formulaire de soumission et d'acceptation et tout Appendice s'y rattachant rempli(s) en bonne et due forme;
  - c. Dessins et devis;
  - d. Conditions générales et clauses:

CG1	Dispositions générales – Services de construction	R2810D	(2015-07-09);
CG2	Administration du contrat	R2820D	(2015-02-25);
CG3	Exécution et contrôle des travaux	R2830D	(2015-02-25);
CG4	Mesures de protection	R2840D	(2008-05-12);
CG5	Modalités de paiement	R2850D	(2015-02-25);
CG6	Retards et modifications des travaux	R2860D	(2013-04-25);
CG7	Défaut, suspension ou résiliation du contrat	R2870D	(2008-05-12);
CG8	Règlement des différends	R2880D	(2015-04-01);
CG9	Garantie contractuelle	R2890D	(2014-06-26);
CG10	Assurances	R2900D	(2008-05-12);
Coûts admissibles pour les modifications de contrat sous CG6.4.1		R2950D	(2015-02-25);
Conditions supplémentaires			
  - e. Toute modification émise ou toute révision de soumission recevable, reçue avant l'heure et la date déterminée pour la clôture de l'invitation;
  - f. Toute modification incorporée d'un commun accord entre le Canada et l'entrepreneur avant l'acceptation de la soumission; et
  - g. Toute modification aux documents du contrat qui est apportée conformément aux conditions générales.
2. Les documents identifiés par titre, numéro et date ci-dessus sont intégrés par renvoi et sont reproduits dans le Guide des clauses et conditions uniformisées d'achat (CCUA) publié par Travaux publics et Services gouvernementaux Canada (TPSGC). Le guide des CCUA est disponible sur le site Web de TPSGC: <https://achatsetventes.gc.ca/politiques-et-lignes-directrices/guide-des-clauses-et-conditions-uniformisees-d-achat/5/R>
3. La langue des documents du contrat est celle du Formulaire de soumission et d'acceptation présenté.

## FORMULAIRE DE SOUMISSION ET D'ACCEPTATION (SA)

### SA01 IDENTIFICATION DU PROJET

Commercial Signal Mast Replacement – Citadel Hill, Halifax, NS

### SA02 NOM COMMERCIAL ET ADRESSE DU SOUMISSIONNAIRE

Nom: \_\_\_\_\_

Adresse: \_\_\_\_\_

Téléphone: \_\_\_\_\_ Télécopieur: \_\_\_\_\_ NEA \_\_\_\_\_

### SA03 OFFRE

Le soumissionnaire offre au Canada d'exécuter les travaux du projet mentionné ci-dessus, conformément aux documents de soumission pour le montant total de la soumission de

\_\_\_\_\_ \$ excluant les taxe(s) applicables.  
(exprimé en chiffres)

### SA04 PÉRIODE DE VALIDITÉ DES SOUMISSIONS

La soumission ne peut être retirée pour une période de trente (30) jours suivant la date de clôture de l'invitation.

### SA05 ACCEPTATION ET CONTRAT

À l'acceptation de l'offre de l'entrepreneur par le Canada, un contrat exécutoire est formé entre le Canada et l'entrepreneur. Les documents constituant le contrat sont ceux mentionnés aux Documents du contrat.

### SA06 DURÉE DES TRAVAUX

L'entrepreneur doit exécuter et compléter les travaux dans les **twelve (12)** semaines à partir de l'avis de l'acceptation de l'offre.

### SA07 GARANTIE DE SOUMISSION

Le soumissionnaire joint à sa soumission une garantie de soumission conformément à l'IG08 - Exigences relatives à la garantie de soumission de la R2710T -Instructions générales - Services de construction - Exigences relatives à la garantie de soumission

### SA08 SIGNATURE

\_\_\_\_\_  
Nom et titre de la personne autorisée à signer au nom du soumissionnaire (Tapés ou lettres moulées)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## APPENDICE 1 - FORMULAIRE DE PRIX COMBINÉS (1 page)

- 1) Les prix unitaires seront retenus pour établir le montant total des prix calculés. Toute erreur arithmétique à cet appendice sera corrigée par le Canada.
- 2) Le Canada peut rejeter la soumission si quelconque des prix soumis ne tient pas fidèlement compte du coût de l'exécution de la partie des travaux à laquelle ce prix s'applique.

### MONTANT FORFAITAIRE

Le montant forfaitaire désigne la partie des travaux qui est assujettie à un arrangement à prix forfaitaire.

- (a) Les travaux inclus dans le montant forfaitaire représentent tous les travaux qui ne sont pas inclus dans le tableau des prix unitaires.

<b>MONTANT FORFAITAIRE (MF)</b> Excluant les taxes applicable(s)	
---	--

### TABLEAU DES PRIX UNITAIRES

Le tableau des prix unitaires désigne la partie des travaux qui est assujettie à un arrangement à prix unitaires.

- a) Les travaux faisant partie de chaque article sont tels que décrits aux sections du devis en référence.
- b) Le prix unitaire ne doit pas inclure de montants pour des travaux qui ne sont pas inclus aux articles de prix unitaires.

Article	Référence au devis	Catégorie de main-d'œuvre, outillage ou matériaux	Unité de mesure	Quantité Estimative (QE)	Prix unitaire (PU) Excluant les taxe(s) applicables	Prix calculé (QE x PU) Excluant les taxe(s) applicables
<b>TOTAL DES PRIX CALCULÉS (TPC)</b> Excluant les taxes applicable(s)						

<b>MONTANT TOTAL DE LA SOUMISSION (MF +TPC)</b> Excluant les taxes applicable(s)	
---	--

## APPENDICE 2 – DISPOSITION RELATIVES À L'INTÉGRITÉ-LISTE DE NOMS

Si la liste exigée n'a pas été fournie à la fin de l'évaluation des offres, le Canada informera l'offrant du délai à l'intérieur duquel l'information doit être fournie. À défaut de fournir les noms dans le délai prévu, l'offre sera jugée non recevable. Fournir les noms requis est une exigence obligatoire pour l'attribution d'un contrat.

Les soumissionnaires constitués en personne morale, y compris ceux qui présentent une soumission à titre de coentreprise, doivent transmettre une liste complète des noms de tous les administrateurs.

Les soumissionnaires qui présentent une soumission en tant que propriétaire unique, incluant ceux présentant une soumission comme coentreprise, doivent fournir le nom du ou des propriétaire(s).

Les soumissionnaires qui présentent une soumission à titre de société, d'entreprise ou d'association de personnes n'ont pas à soumettre une liste de noms.

[illegible]

### APPENDICE 3 – ATTESTATION VOLONTAIRE À L'APPUI DU RECOURS AUX APPRENTIS

*Avis; L'entrepreneur sera appelé à compléter à tous les six mois ou à la fin des travaux un rapport tel qu'inclus à l'annexe C « Rapport volontaire d'apprentis employés pendant les contrats ».*

*Nom:* \_\_\_\_\_

*Signature:* \_\_\_\_\_

*Nom de la compagnie:* \_\_\_\_\_

*Dénomination sociale:* \_\_\_\_\_

*Numéro de l'invitation à soumissionner:* \_\_\_\_\_

*Nombre d'employés de l'entreprise:* \_\_\_\_\_

*Nombre planifié d'apprentis qui travailleront sur ce contrat:* \_\_\_\_\_

*Métiers spécialisés de ces apprentis;*

---

---

---

---

---

---

---

---

## APPENDICE 4 – POUVOIRS DU REPRÉSENTANT DU MINISTÈRE

SERONT NOMMES A L'ATTRIBUTION DU CONTRAT.

L'autorité contractante est :

**Nom : JACQUELYN STEVENSON**

**Titre : Agent d'approvisionnement**

**Ministère : Travaux publics et Services gouvernementaux Canada**

**Téléphone : 902.403.3520**

**courriel : jacquelyn.stevenson@pwgsc.gc.ca**

Responsable technique :

Nom : \_\_\_\_\_

Titre : \_\_\_\_\_

Ministère : \_\_\_\_\_

Division : \_\_\_\_\_

Téléphone : \_\_\_\_ - \_\_\_\_ - \_\_\_\_\_

courriel : \_\_\_\_\_

**ANNEXE A – ATTESTATION D'ASSURANCE** (N'est pas requise lors du dépôt de soumission)

## **ANNEXE B - RAPPORT VOLONTAIRE D'APPRENTIS EMPLOYÉS PENDANT LES CONTRATS (exemple)**

*(Ce rapport volontaire n'est pas requis lors du dépôt de soumission)*

L'entrepreneur devrait compiler et tenir à jour des données sur le nombre d'apprentis ayant été embauchés pour travailler sur le contrat, ainsi que leur métier spécialisé.

L'entrepreneur devrait fournir ces données conformément au format ci-dessous. Si aucun apprenti n'a été embauché pendant la durée du contrat, l'entrepreneur devrait soumettre un rapport portant la mention « néant ».

Les données devraient être présentées à l'autorité contractante au plus tard six mois après l'octroi du contrat ou à la fin du contrat, selon la première éventualité.

<b>Nombre d'apprentis embauchés</b>	<b>Métier spécialisé</b>

(Ajouter des lignes au besoin)



# ATTESTATION D'ASSURANCE

Page 1 de 2

Description et emplacement des travaux	N° de contrat. <b>EB144-161117</b>
<b>SIGNAL MAST REPLACEMENT – CITADEL HILL, HALIFAX, NOVA SCOTIA</b>	N° de projet <b>R.077940.001</b>

Nom de l'assureur, du courtier ou de l'agent	Adresse (N°, rue)	Ville	Province	Code postal
--	-------------------	-------	----------	-------------

Nom de l'assuré (Entrepreneur)	Adresse (N°, rue)	Ville	Province	Code Postal
--------------------------------	-------------------	-------	----------	-------------

Assuré additionnel <b>Sa majesté la Reine du chef du Canada représentée par le Ministre des Travaux publics et des Services gouvernementaux</b>
--

Genre d'assurance	Compagnie et N° de la police	Date d'effet J / M / A	Date d'expiration J / M / A	Plafonds de garantie		
<b>Responsabilité civile des entreprises</b>  <b>Responsabilité complémentaire/exc édentaire.</b>				Par sinistre	Global général annuel	Global - Risque après travaux
				\$	\$	\$
				\$	\$	\$

J'atteste que les polices ci-dessus ont été émises par des assureurs dans le cadre de leurs activités d'assurance au Canada et que ces polices sont présentement en vigueur, comprennent les garanties et dispositions applicables de la page 2 de l'Attestation d'assurance, incluant le préavis d'annulation ou de réduction de garantie.

Nom de la personne autorisée à signer au nom de(s) (l')assureur(s) (Cadre, agent, courtier)

Numéro de téléphone

Signature

Date J / M / A

## ATTESTATION D'ASSURANCE Page 2 de 2

### Généralités

Les polices exigées à la page 1 de l'Attestation d'assurance doivent être en vigueur et doivent inclure les garanties énumérées sous le genre d'assurance correspondant de cette page-ci.

Les polices doivent assurer l'entrepreneur et doivent inclure, en tant qu'assuré additionnel, Sa majesté la Reine du chef du Canada représentée par le Ministre des Travaux publics et des Services gouvernementaux.

Les polices d'assurance doivent comprendre un avenant prévoyant la transmission au Canada d'un préavis écrit d'au moins trente (30) jours en cas d'annulation de l'assurance ou de toute réduction de la garantie d'assurance.

Sans augmenter la limite de responsabilité, la police doit couvrir toutes les parties assurées dans la pleine mesure de la couverture prévue. De plus, la police doit s'appliquer à chaque assuré de la même manière et dans la même mesure que si une police distincte avait été émise à chacun d'eux.

### Responsabilité civile des entreprises

La garantie d'assurance fournie ne doit pas être substantiellement inférieure à la garantie fournie par la dernière publication du formulaire BAC 2100.

La police doit inclure ou avoir un avenant pour l'inclusion d'une garantie pour les risques et dangers suivants si les travaux y sont assujettis :

- a) Dynamitage.
- b) Battage de pieux et travaux de caisson.
- c) Reprise en sous-œuvre.
- d) Enlèvement ou affaiblissement d'un support soutenant toute structure ou terrain, que ce support soit naturel ou non, si le travail est exécuté par l'entrepreneur assuré.

La police doit comporter:

- a) un « Plafond par sinistre » d'au moins **5 000 000 \$**;
- b) un « Plafond global général » d'au moins **10 000 000 \$** par année d'assurance, si le contrat d'assurance est assujetti à une telle limite.
- c) un « Plafond pour risque produits/après travaux » d'au moins **5 000 000 \$**.

Une assurance responsabilité complémentaire ou excédentaire peut être utilisée pour atteindre les plafonds obligatoires.

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.

- 
- .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. Codes and Standards
- .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. Project Meetings
- .1 *Departmental Representative* will arrange project meetings and assume responsibility for setting times and recording and distributing minutes.
8. Setting Out of Work
- .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

- 
- 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.

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

## Project Particulars And Measurement

Page 6

- 
- .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.*

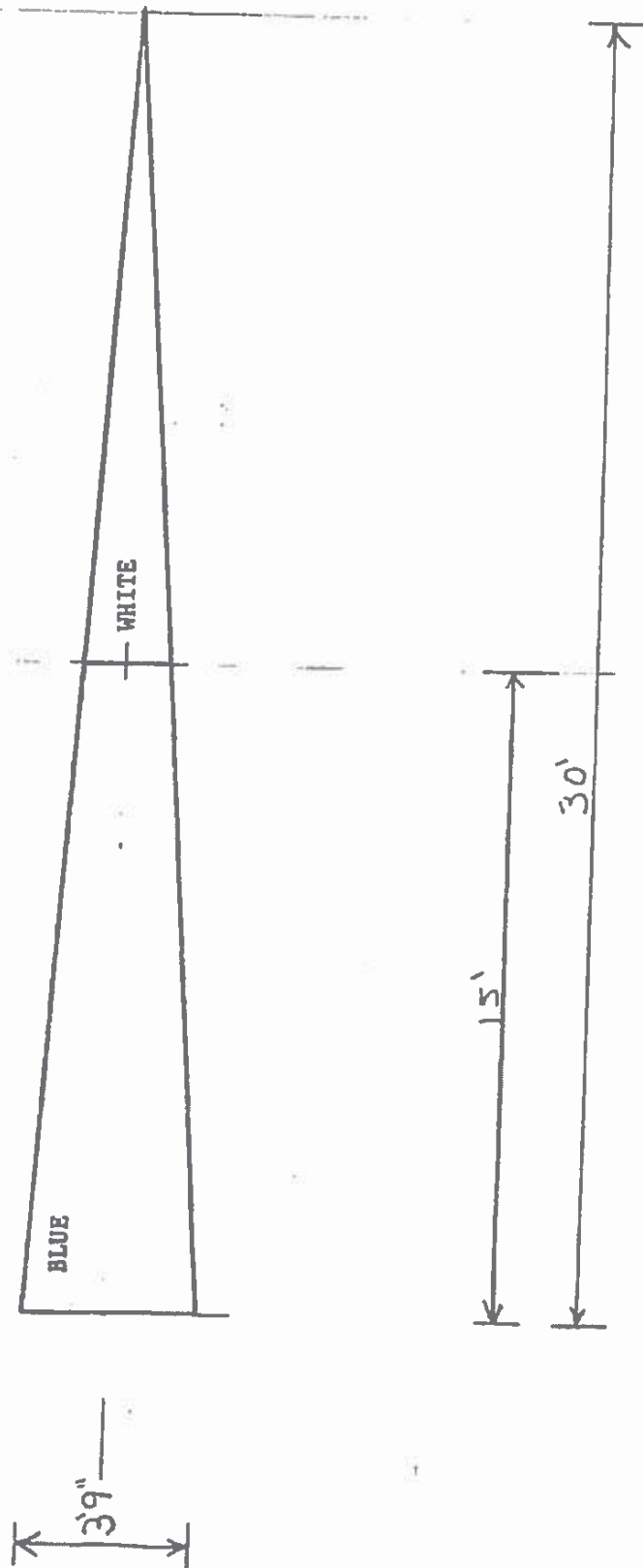
### **Contractor Review of Sample Signal Flags:**

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

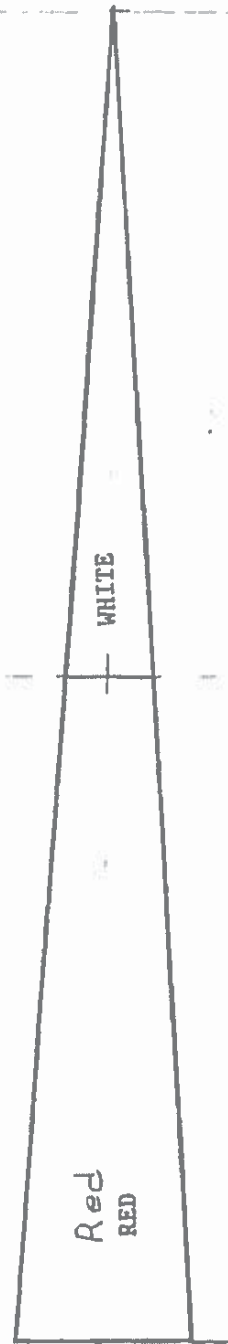
**A. Quantity of each Flag by name to be provided by the supplier.**

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	<b>Union Jack</b>	3
64	<b>1867 US Flag</b>	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

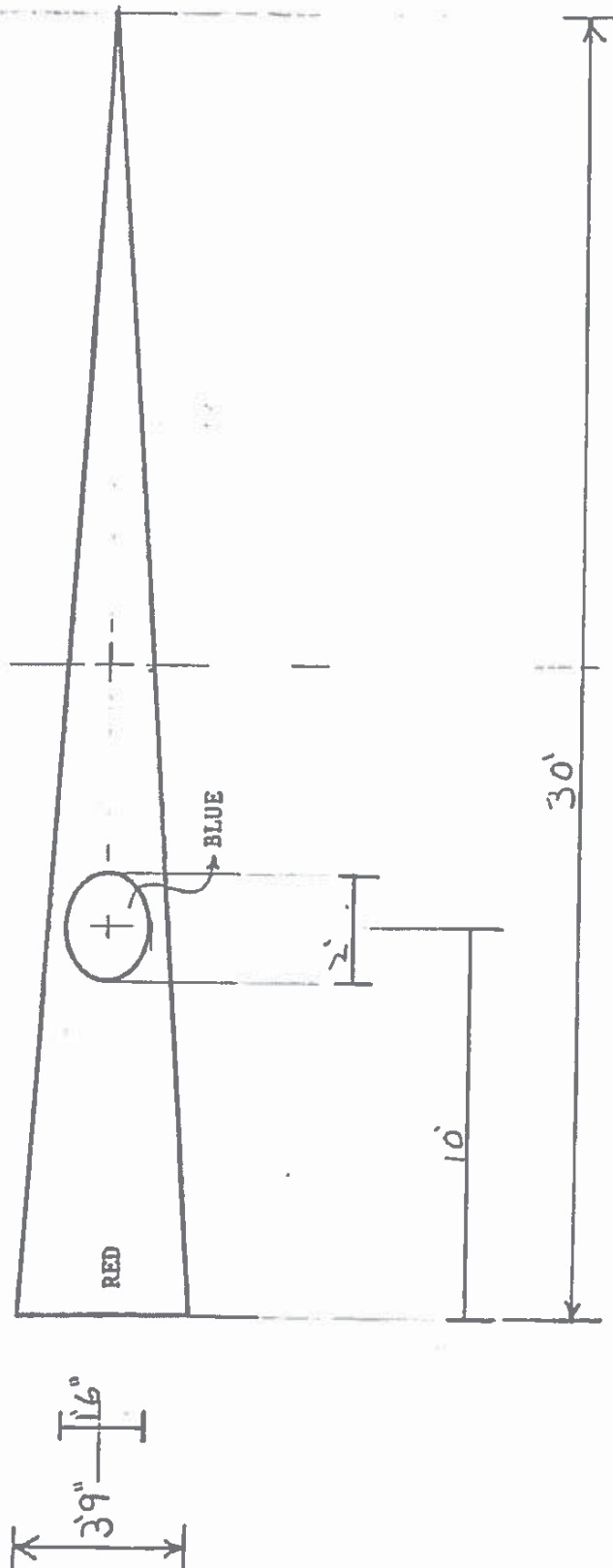


Drawn By: Matt Siemers      Scale: 1/2 inch  
Design Based on Historic Chart  
Project Title: Commercial Signal Flags  
Drawing Title: Brigantine Pennant  
Drawing Number: P.2  
Responsible Officer: Scott Watson, ISO-HDC

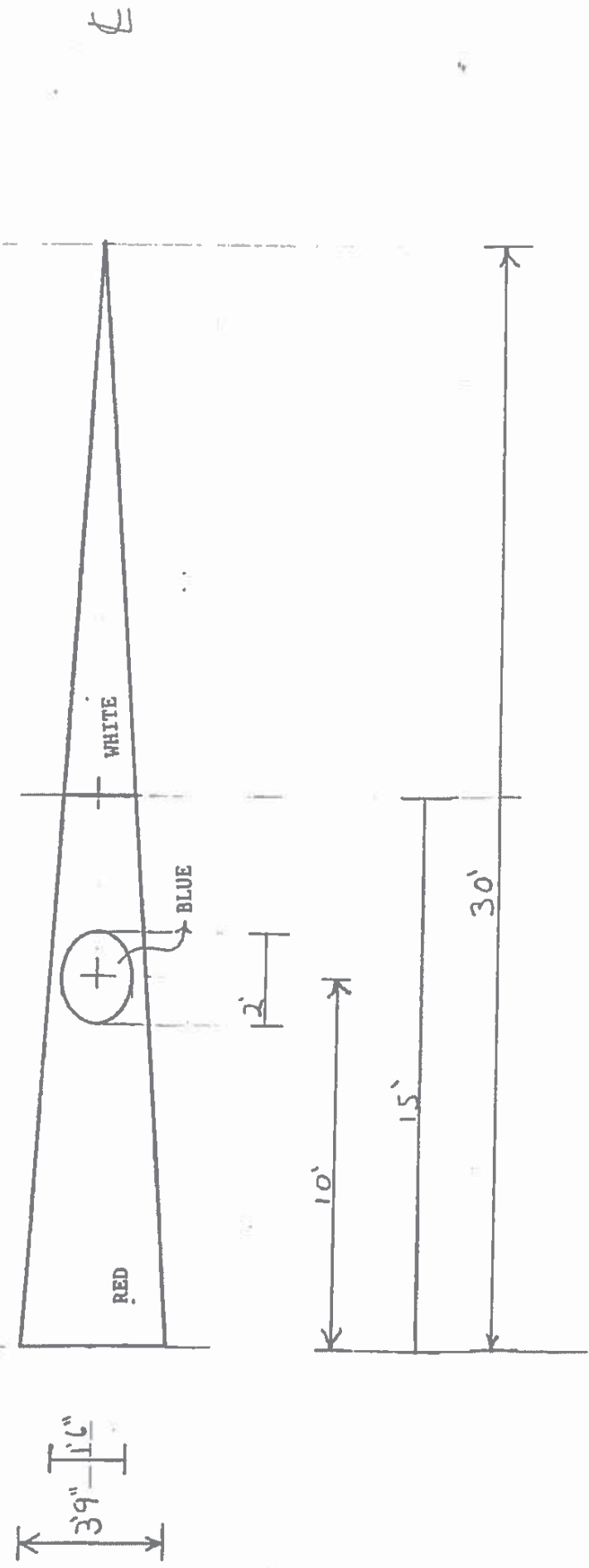


1/2

Drawn By: Matt Siemens      Scale: 1/4 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

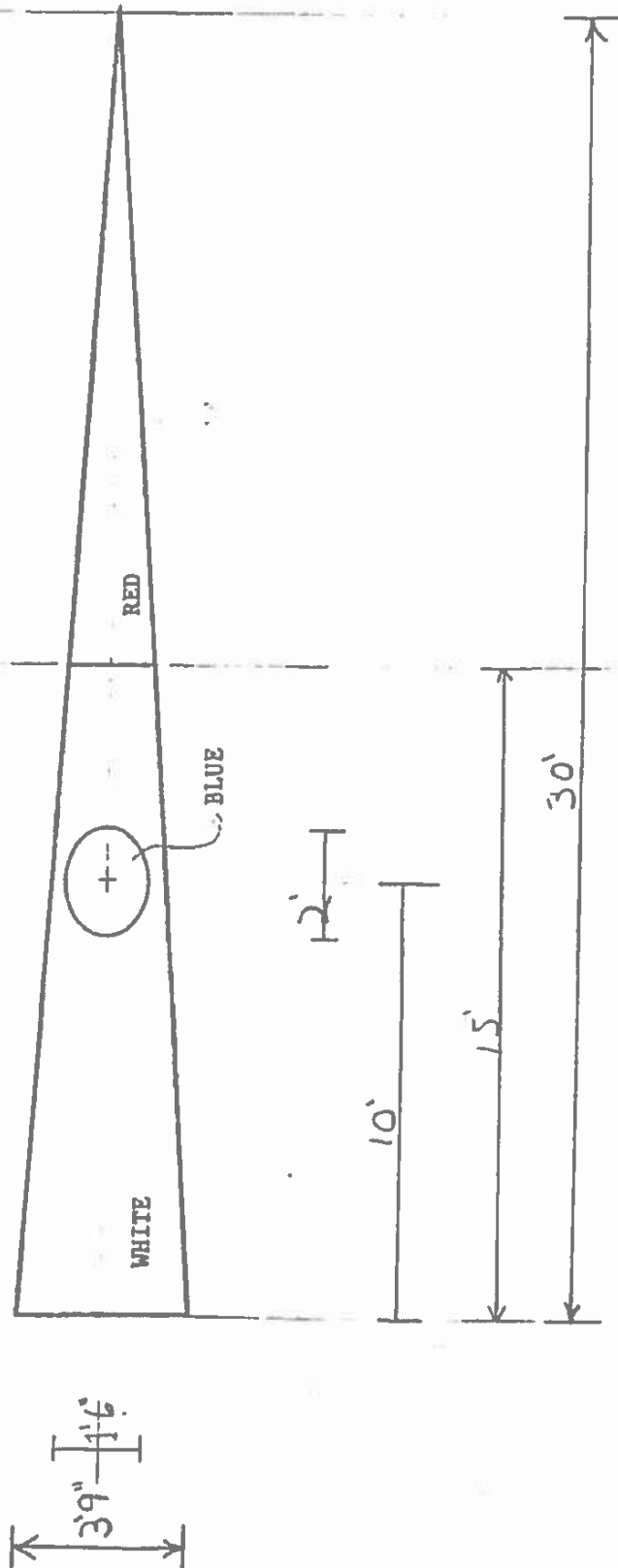


Drawn by: Matt Siemens      Scale: 1/4 inch  
Design Based on Historic Chart  
Project Title: Commercial Signal Flags  
Drawing Title: Originating of War pennant  
Drawing Number: P. 4  
Responsible Officer: Scott Watson, ISO-HDC



1/4

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



SCOTT WATSON

DESIGN CHART

PROJECT TITLE

DRAWING TITLE

DRAWING NUMBER

RESPONSIBLE OFFICER

ISO-HDC

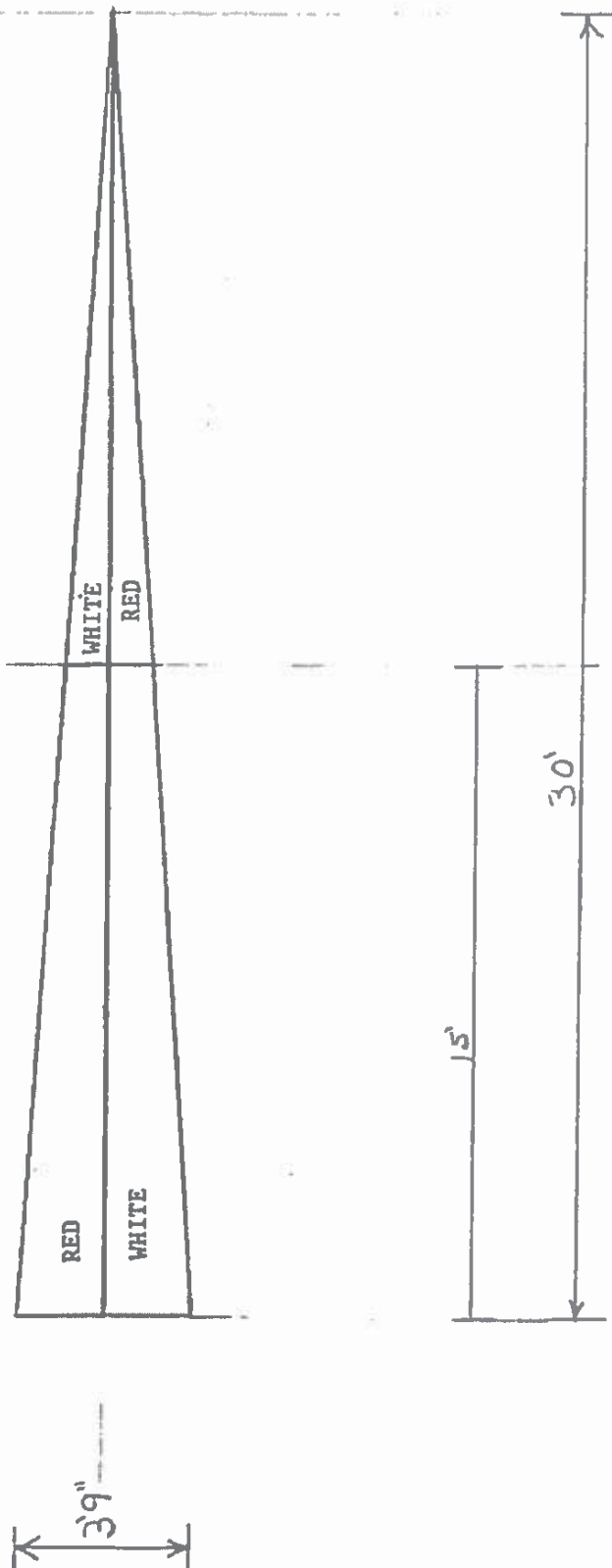
Design Based on Historic Chart

Project Title: Commercial Signal Flags

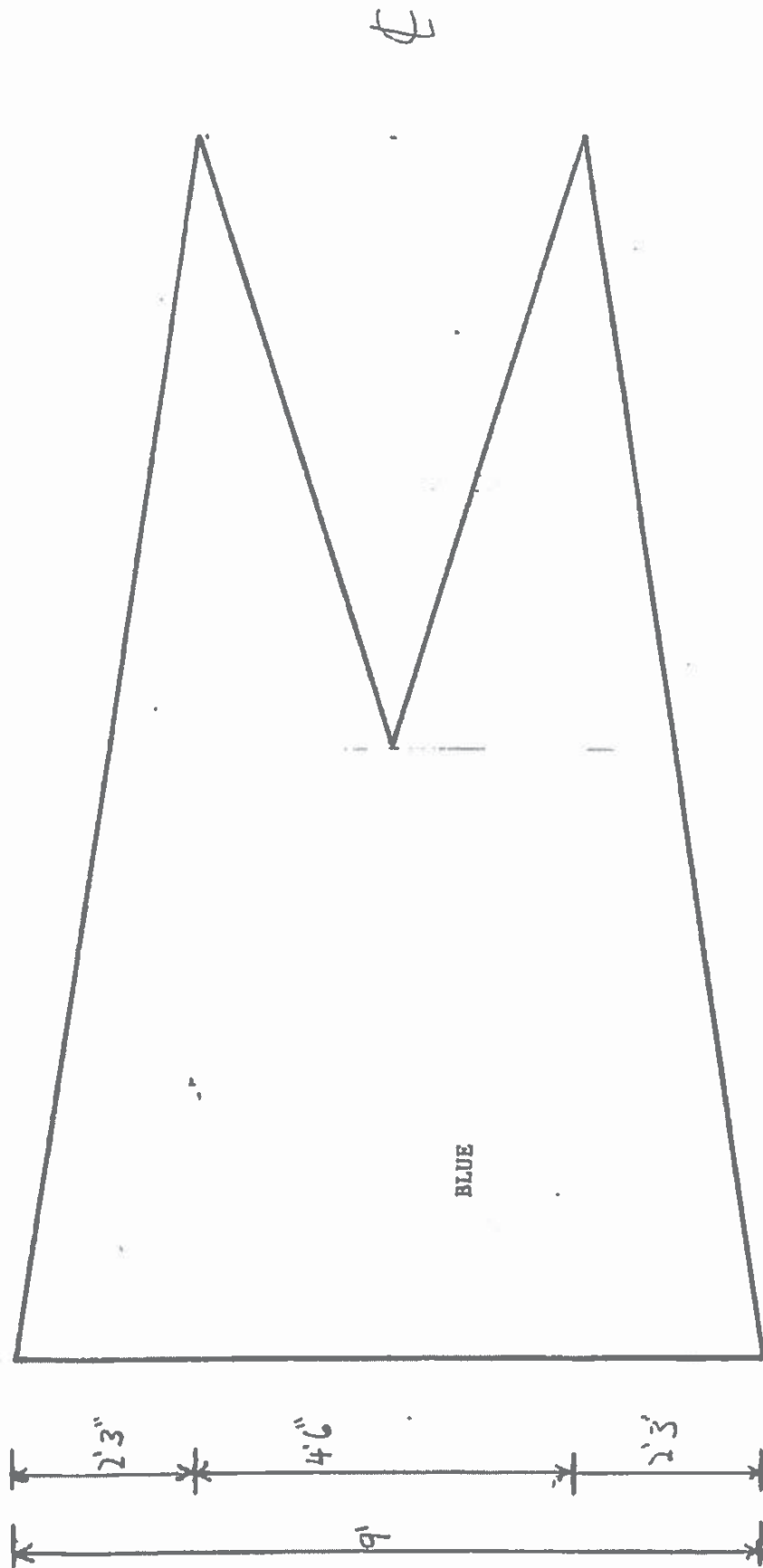
Drawing Title: Interrogative, Demand, Command

Drawing Number: P 6

Responsible Officer: Scott Watson, ISO-HDC

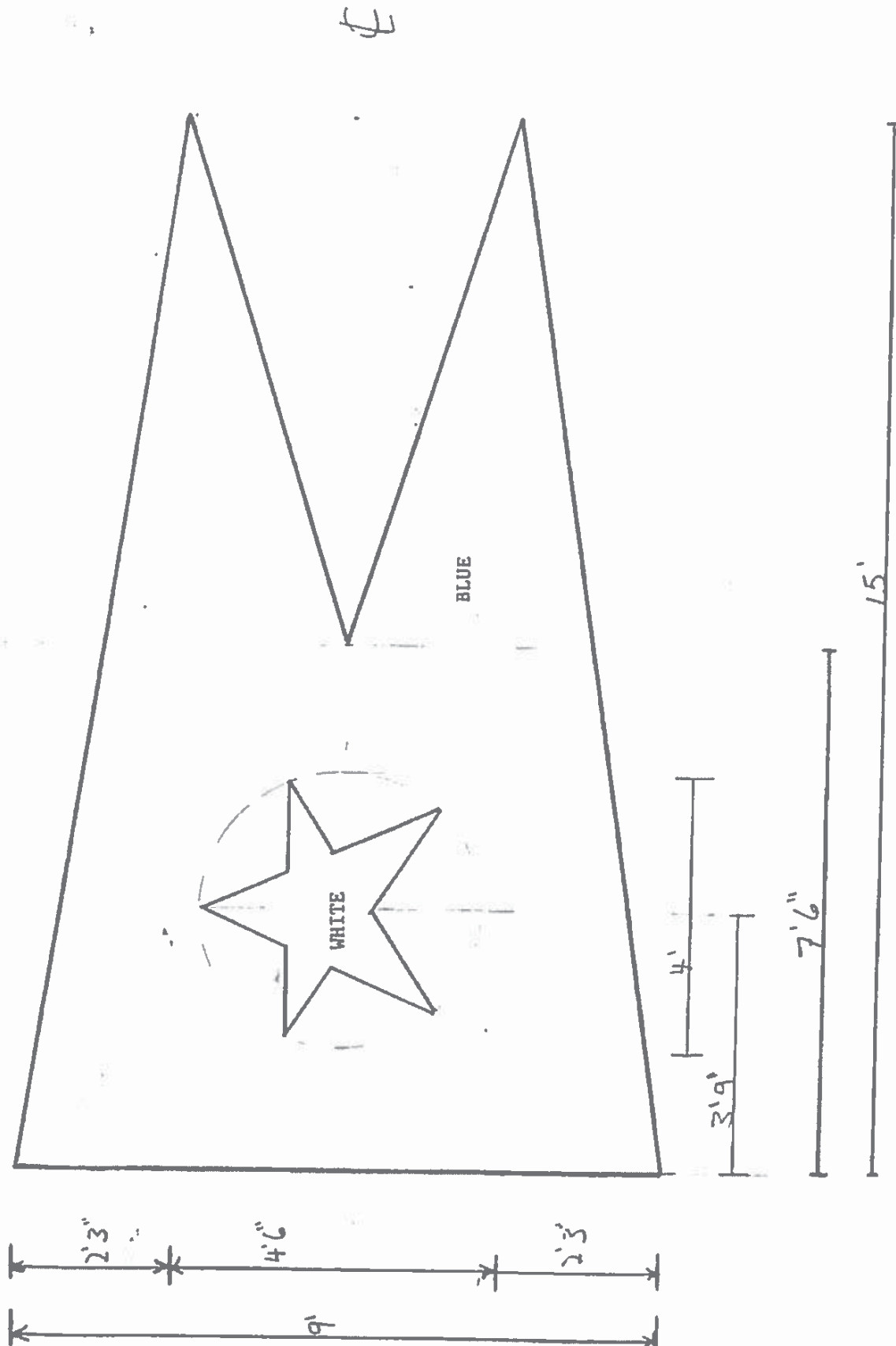


Drawn By: Matt Siemers Scale: 1/2 inch  
Design based on historic chart  
Project Title: Commercial Signal Flags  
Drawing Title: All: Sea & Co. Barge  
Drawing Number: 0.1.  
Responsible Officer: Scott Watson, ISO-HDC

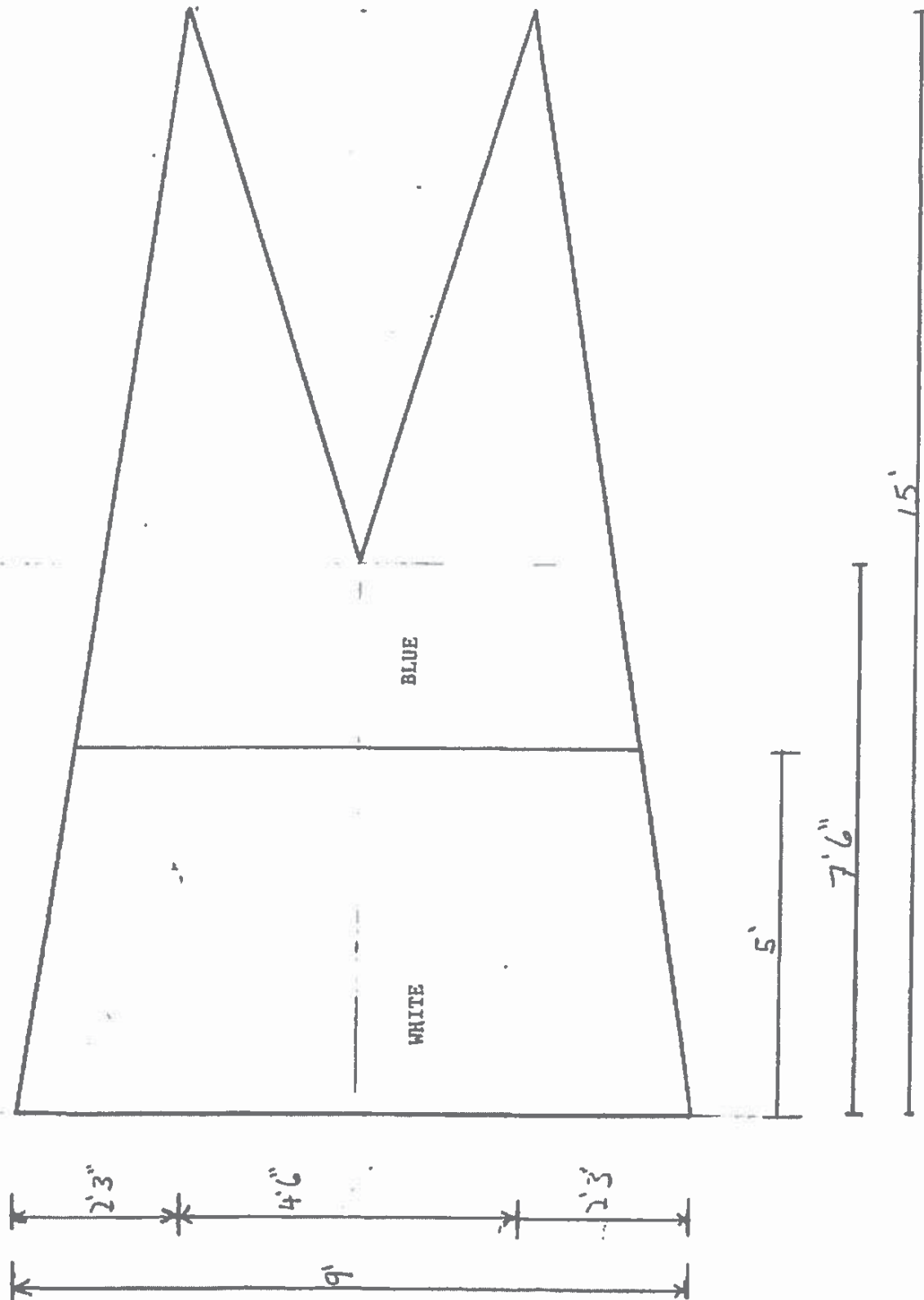


7'6"

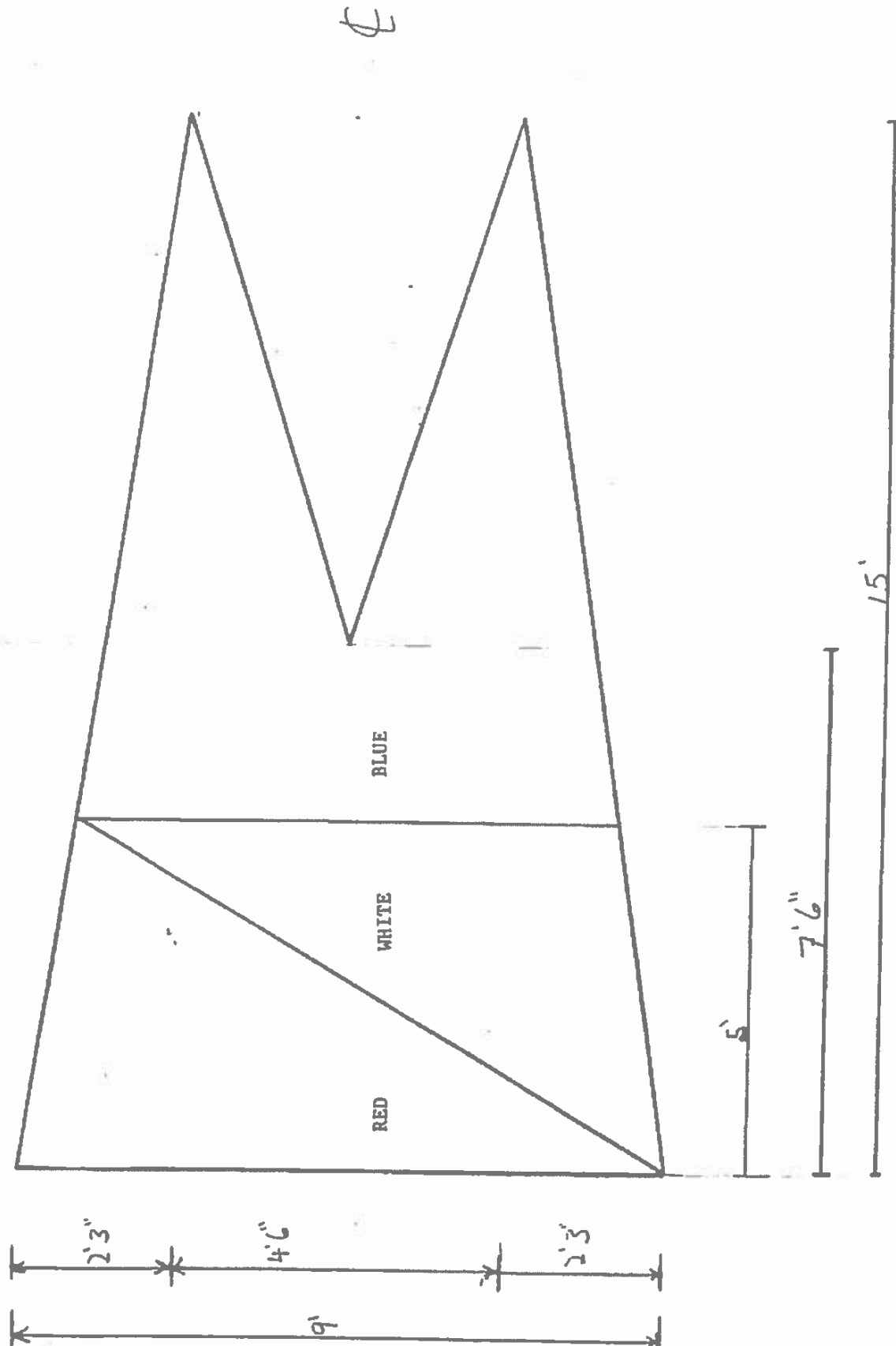
Drawn By: Matt Siemers Scale: 1/4 inch  
Design based on historic chart.  
Project Title: Commercial Signal Flags  
Drawing Title: West Surge  
Drawing Number: B.2.  
Responsible Officer: Scott Watson, ISO-HDC



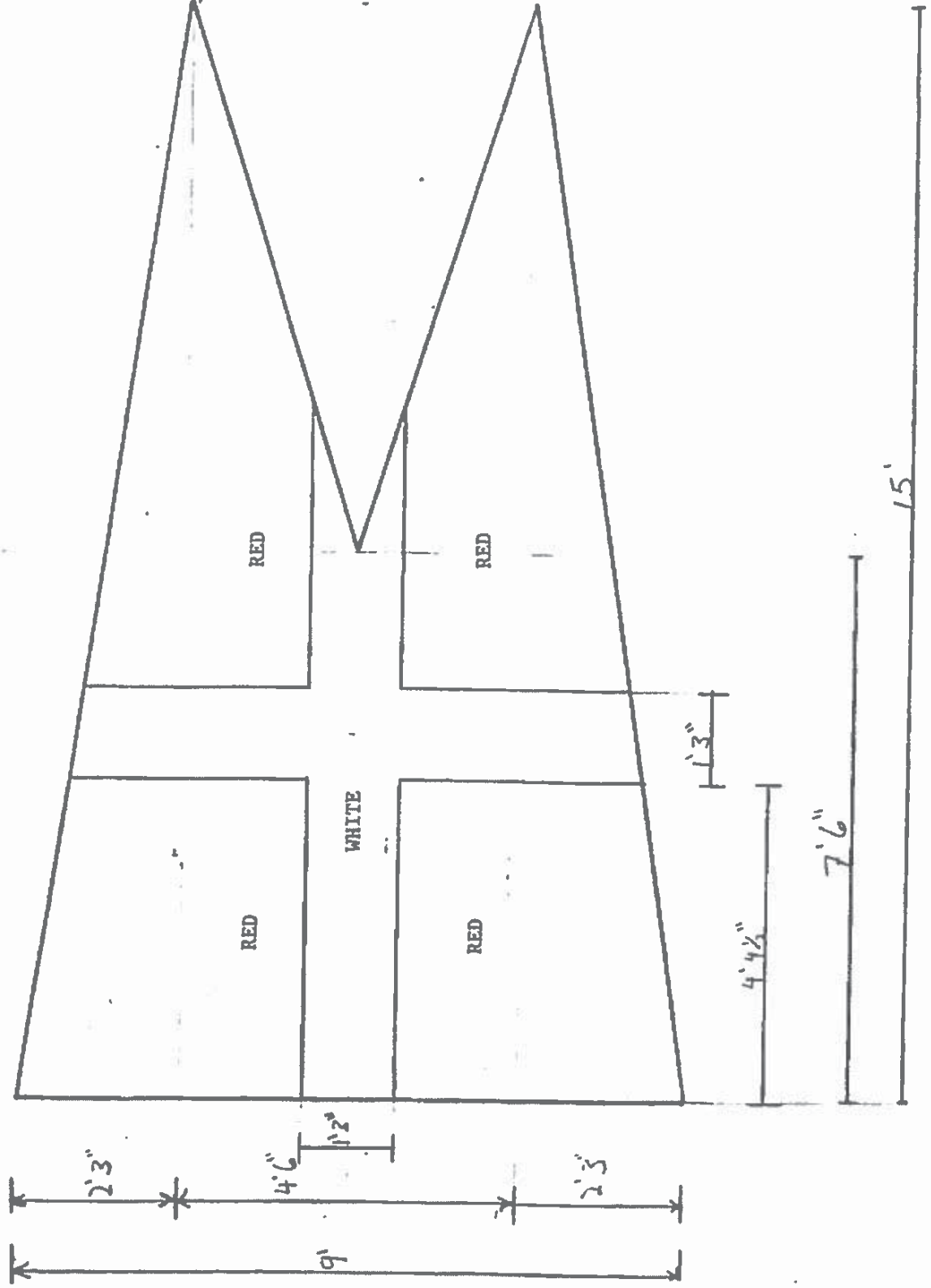
Drawn By: Matt Siemers Scale: 1/4 inch  
Design based on historic chart  
Project Title: Commercial Signal Flags  
Drawing Title: W.H. Creighton Burgee  
Drawing Number: 13.3.  
Responsible Officer: Scott Watson, ISO-RDC



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

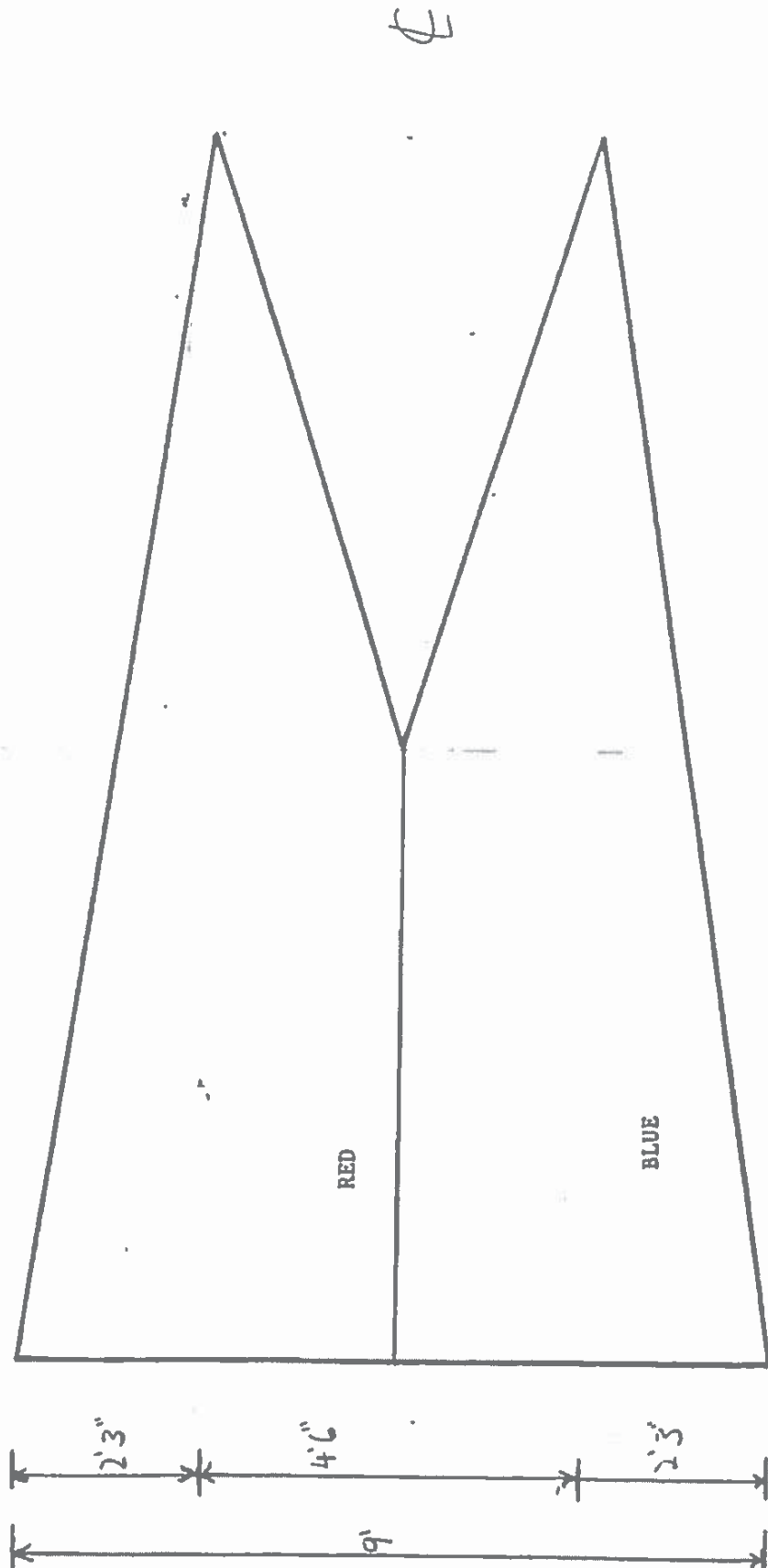


Drawn By: Matt Siemens    Scale: 1/4 inch  
 Design based on historic chart  
 Project Title: Commercial Signal Flags  
 Drawing Title: S.F. Bars Burgee  
 Drawing Number: 3.5  
 Responsible Officer: Scott Watson, ISO-HDC



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-

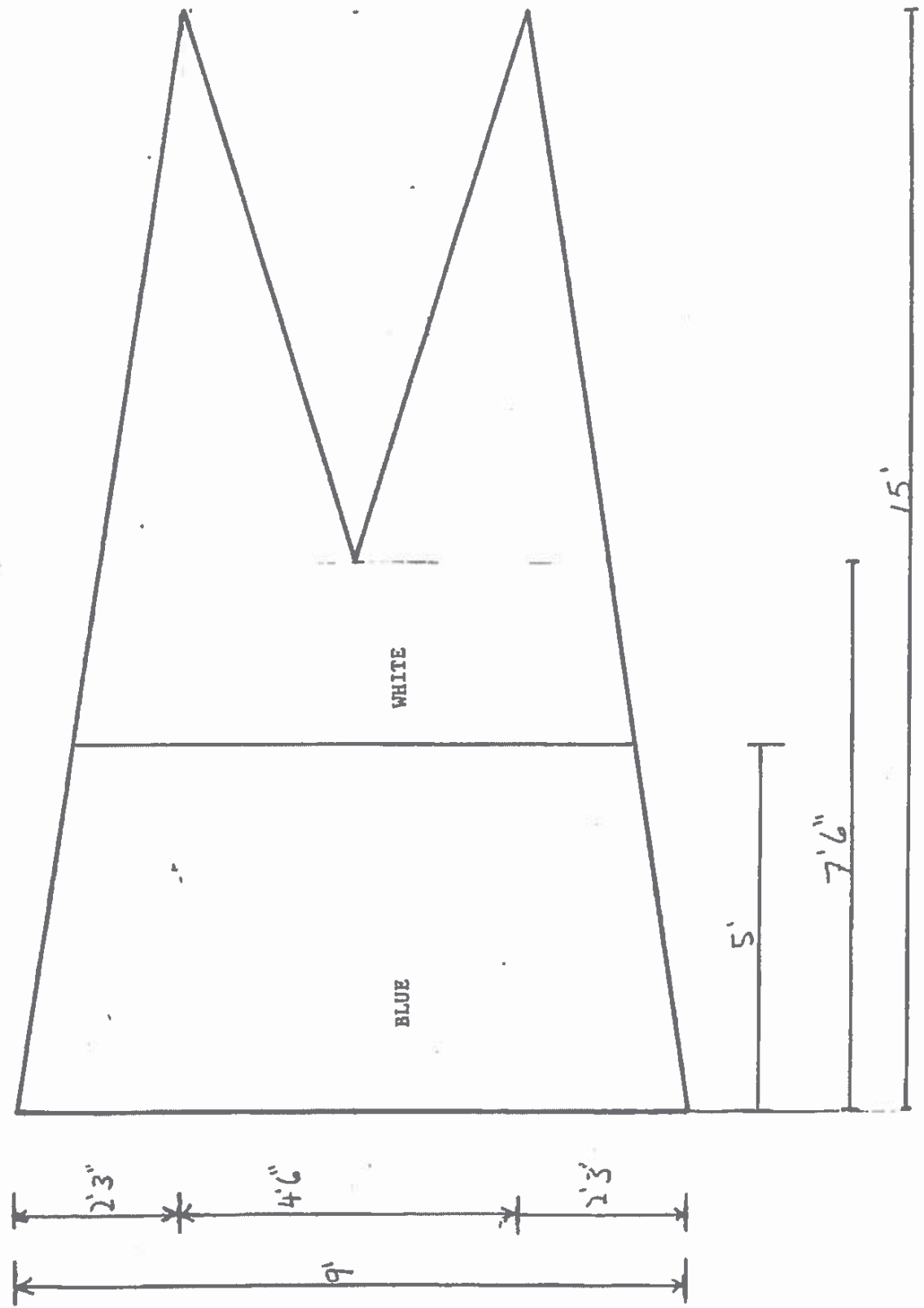
4



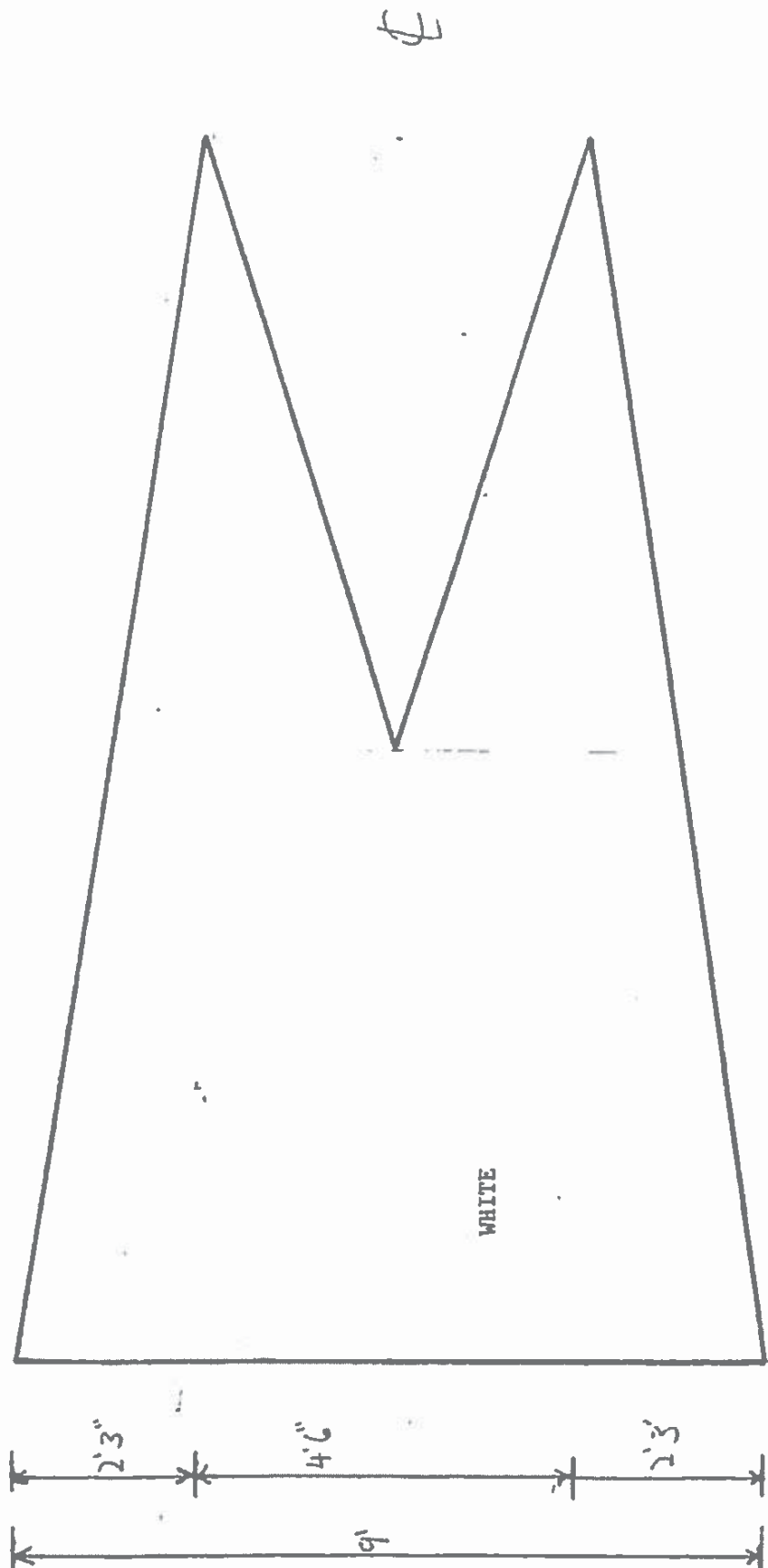
7'6"

15'

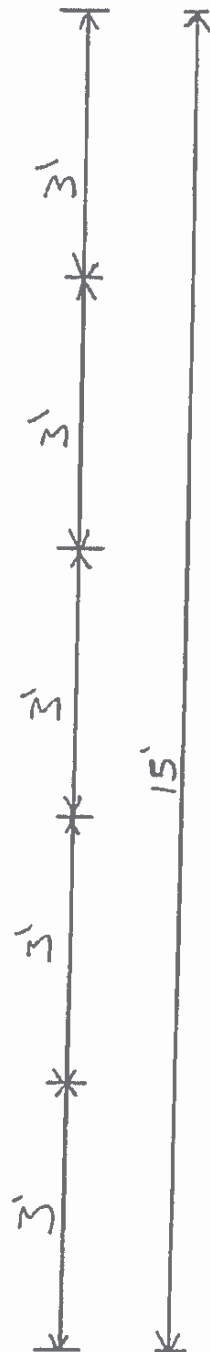
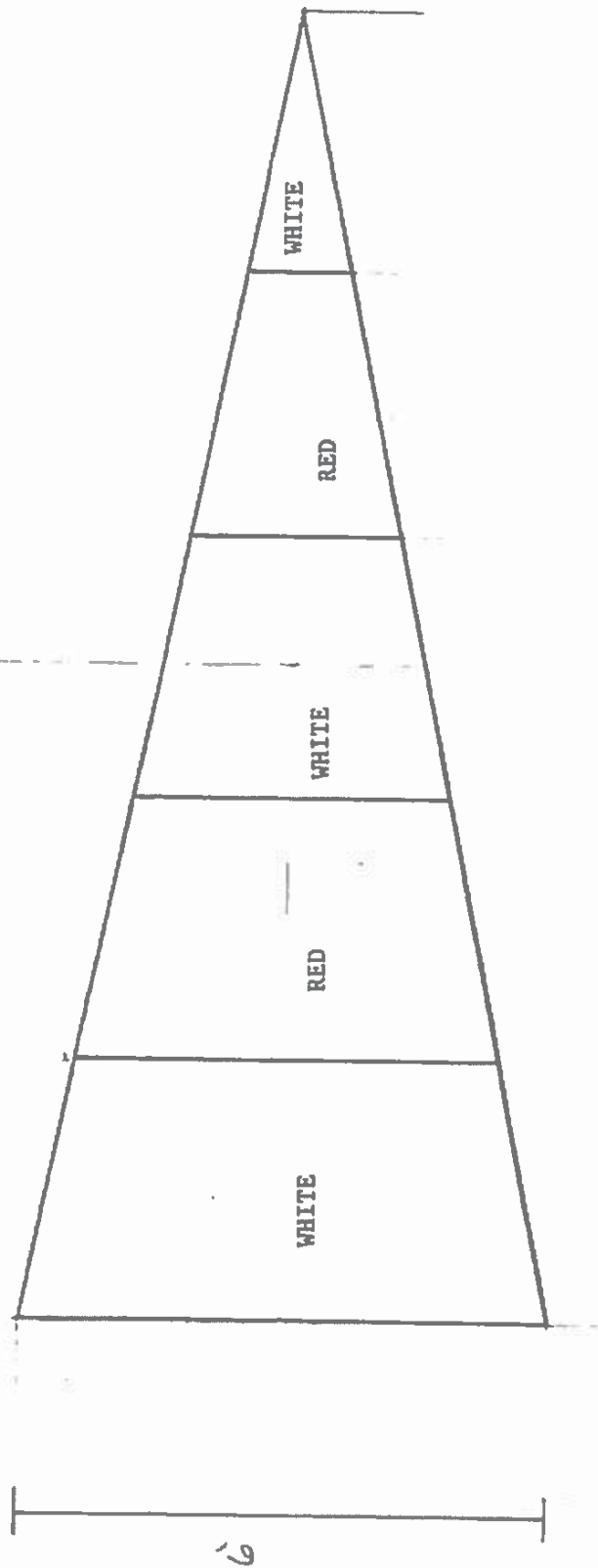
Drawn By: Matt Siemers Scale: 1/4 inch  
Design based on historic chart.  
Project Title: Commercial Signal Flags  
Drawing Title: Full Bargee  
Drawing Number: B.7  
Responsible Officer: Scott Watson, ISO-HDC



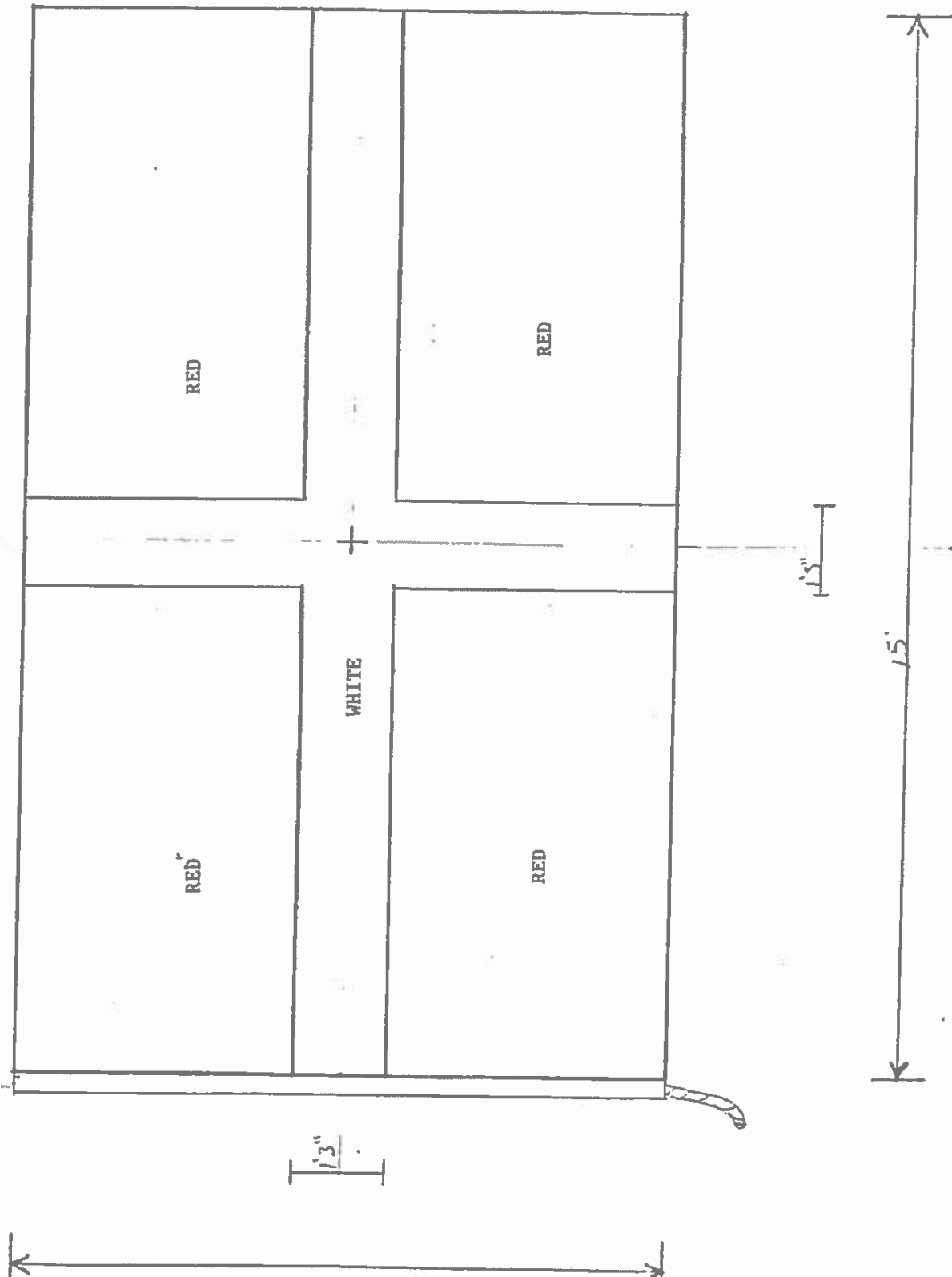
Drawn By: Matt Siemers Scale: 1/2 inch  
Design based on historic chart  
Project Title: Commercial Signal Flags  
Drawing Title: C.H. Starr & Co., B u r g e s s  
Drawing Number: B.8  
Responsible Officer: Scott Watson, ISO-HDC



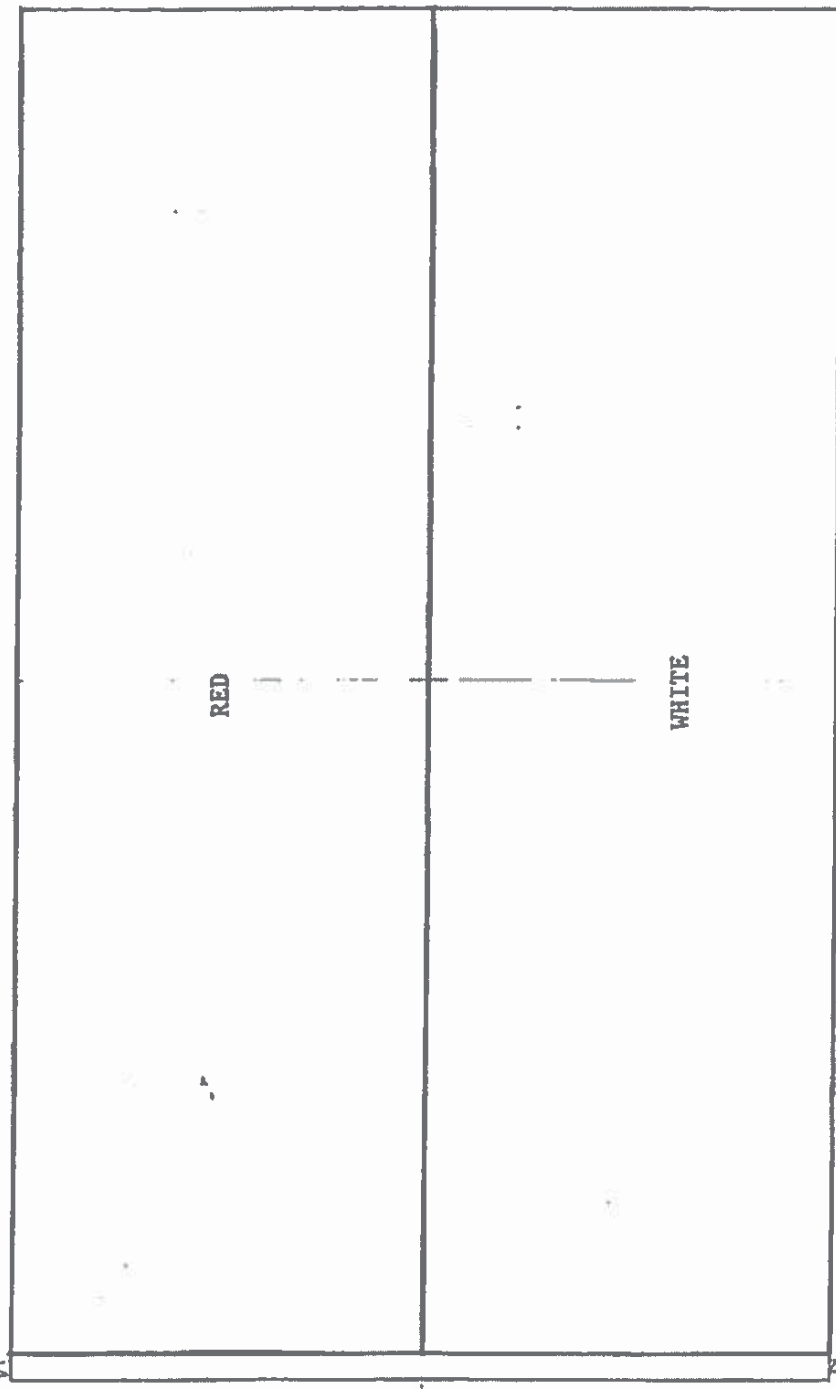
Drawn By: Matt Siemers      Scale: 1/4 inch  
Design Based on historic chart  
Project title: Commercial Signal Flags  
Drawing Title: Cronan Commercial Pennant  
Drawing Number: CP 1  
Responsible Officer: Scott Watson, ISO-HDC



Drawn by: Matt Stammers 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

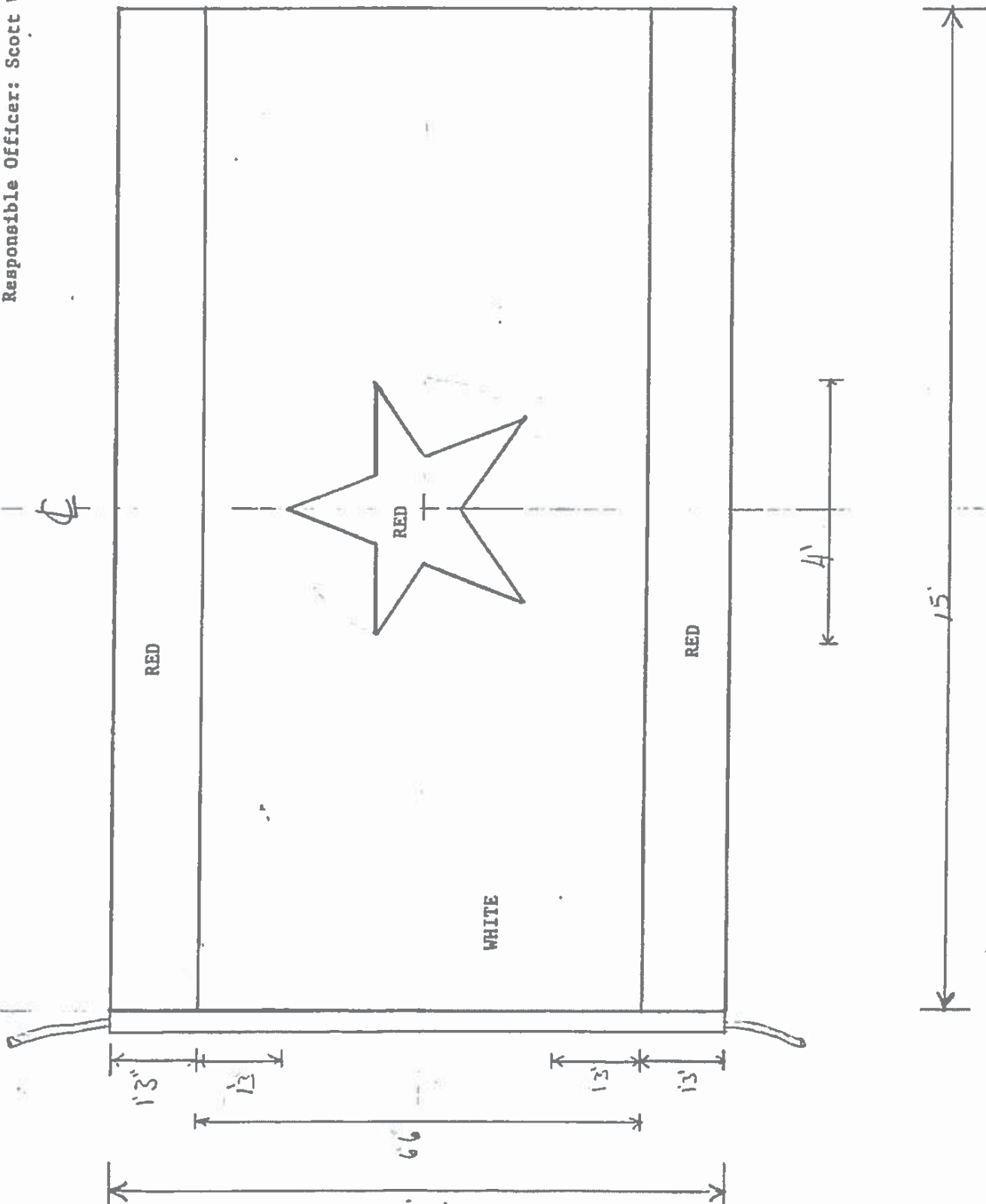


Drawn By: Matt Siemers      Scale: 1/4 inch  
Design Based on Historic Chart  
Project Title: Commercial Signal Flags  
Drawing Title: Bolton Flag  
Drawing Number: F 2  
Responsible Officer: Scott Watson, ISO-HDC

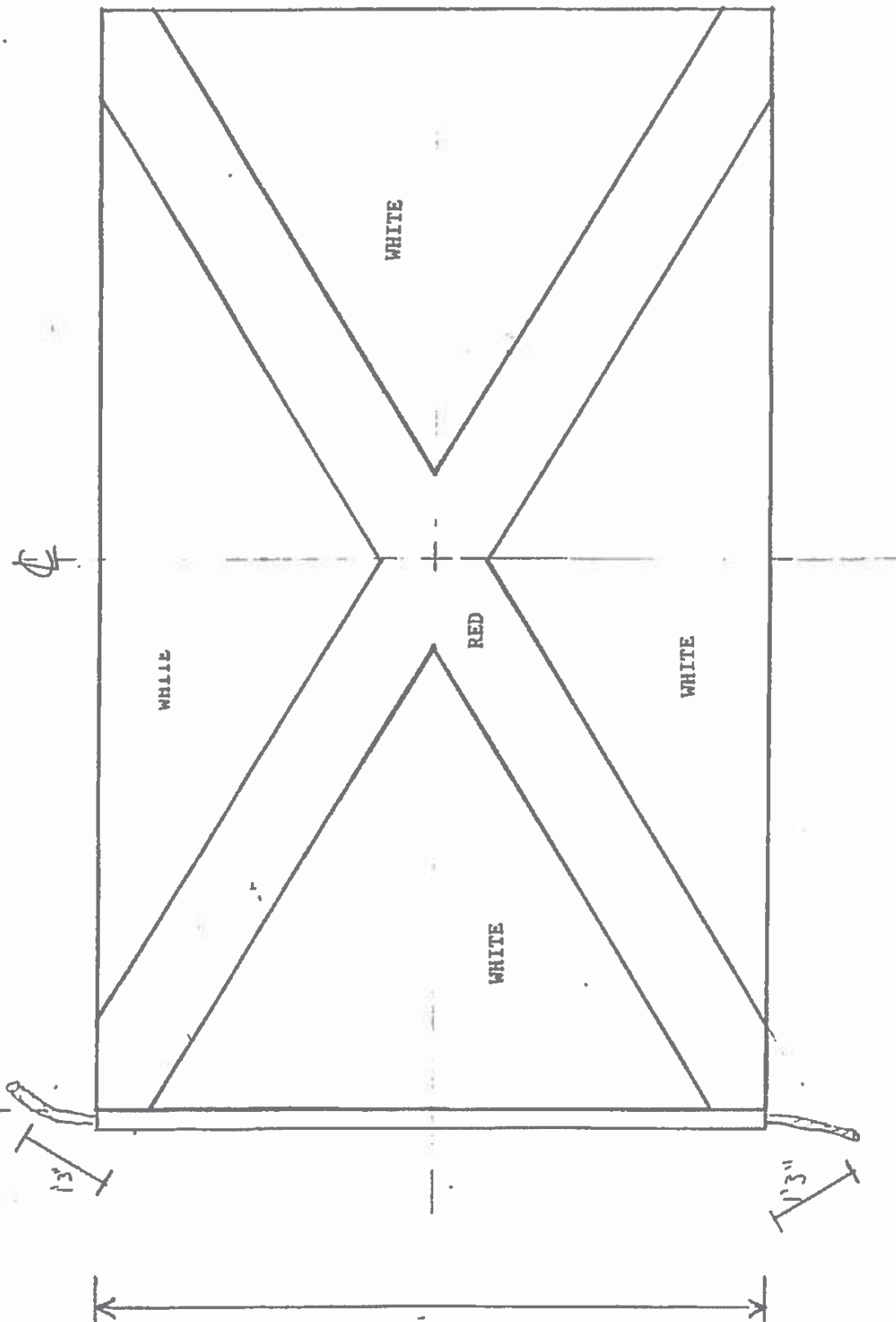


15'

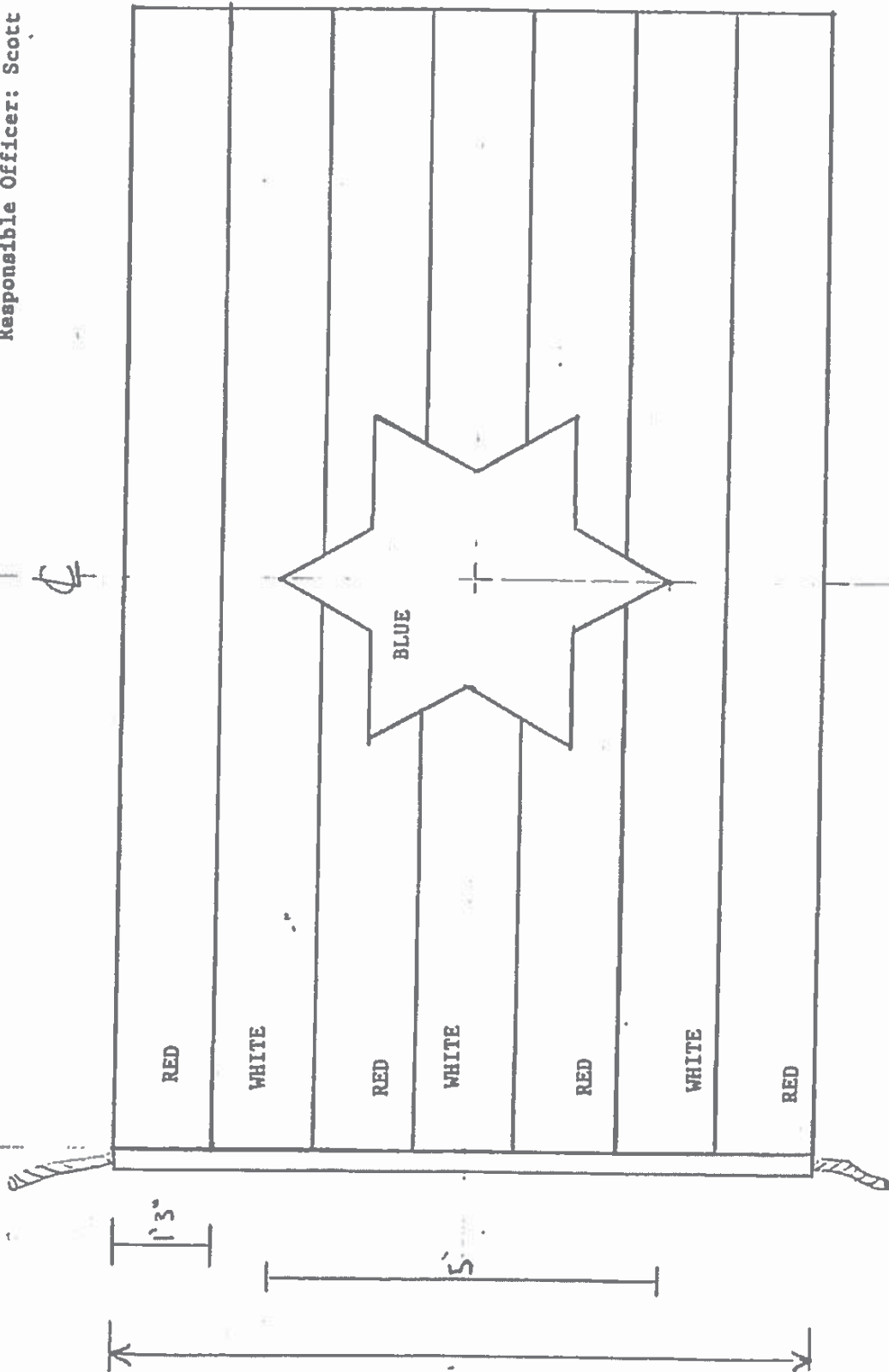
DRAWN BY: RUTH CLEMENS      Scale: 1 inch  
 Design Based on Historic Chart  
 Project Title: Commercial Signal Flags  
 Drawing Title: T.C. Kinnear & Co., Flag  
 Drawing Number: F.3  
 Responsible Officer: Scott Watson, ISO-HDC



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

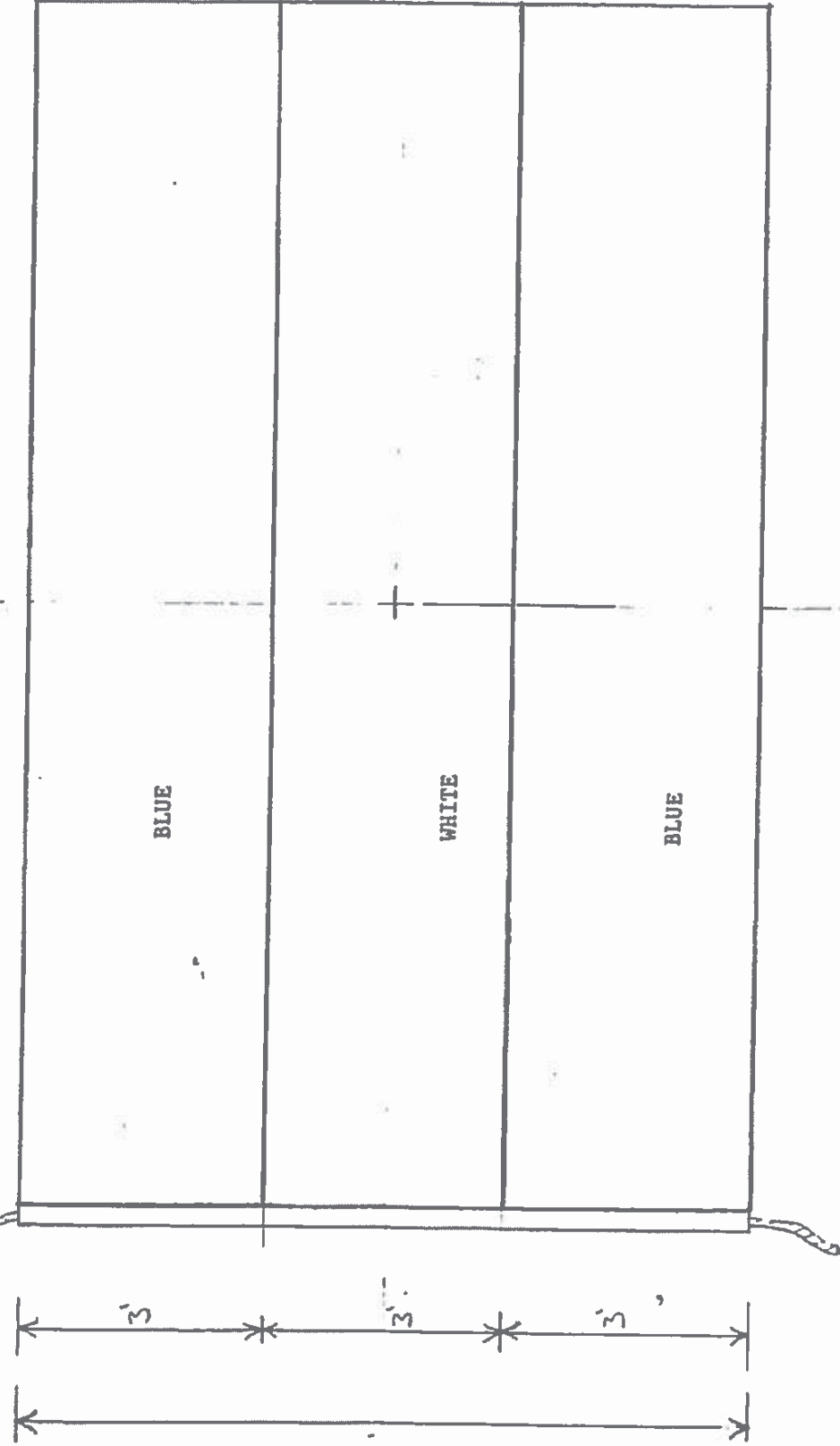


Drawn By: Matt Siemers      Scale: 1/4 inch  
Design Based on Historic Chart  
Project Title: Commercial Signal Flags  
Drawing Title: Young & Hart Flag  
Drawing Number: F. 5  
Responsible Officer: Scott Watson, ISO-HDC



15'

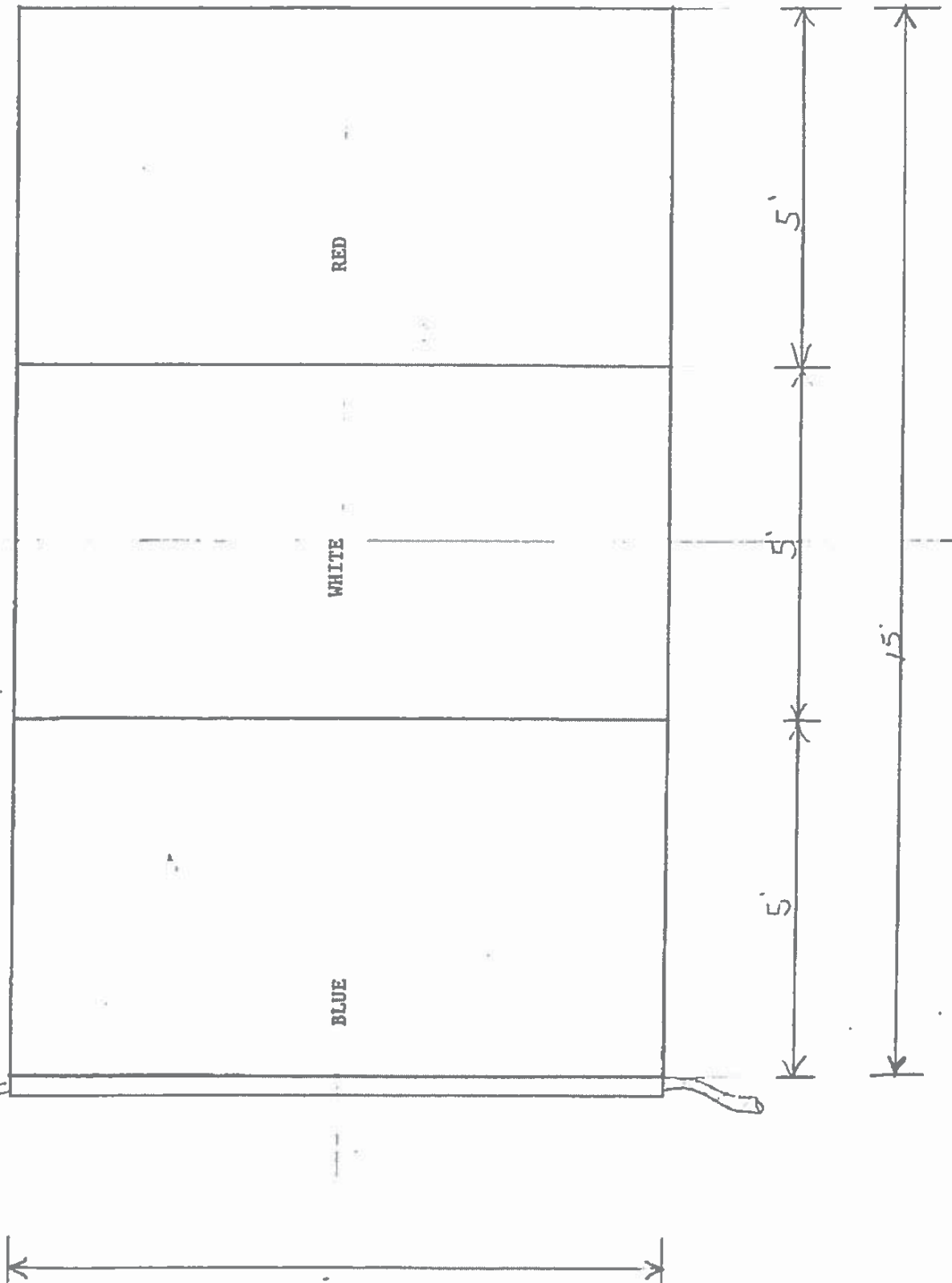
Drawn By: Matt Siemers      Scale: 1 inch  
Design Based on Historic Chart  
Project Title: Commercial Signal Flags  
Drawing Title: Hamilton Flag  
Drawing Number: F 6  
Responsible Officer: Scott Watson, ISO-HDC



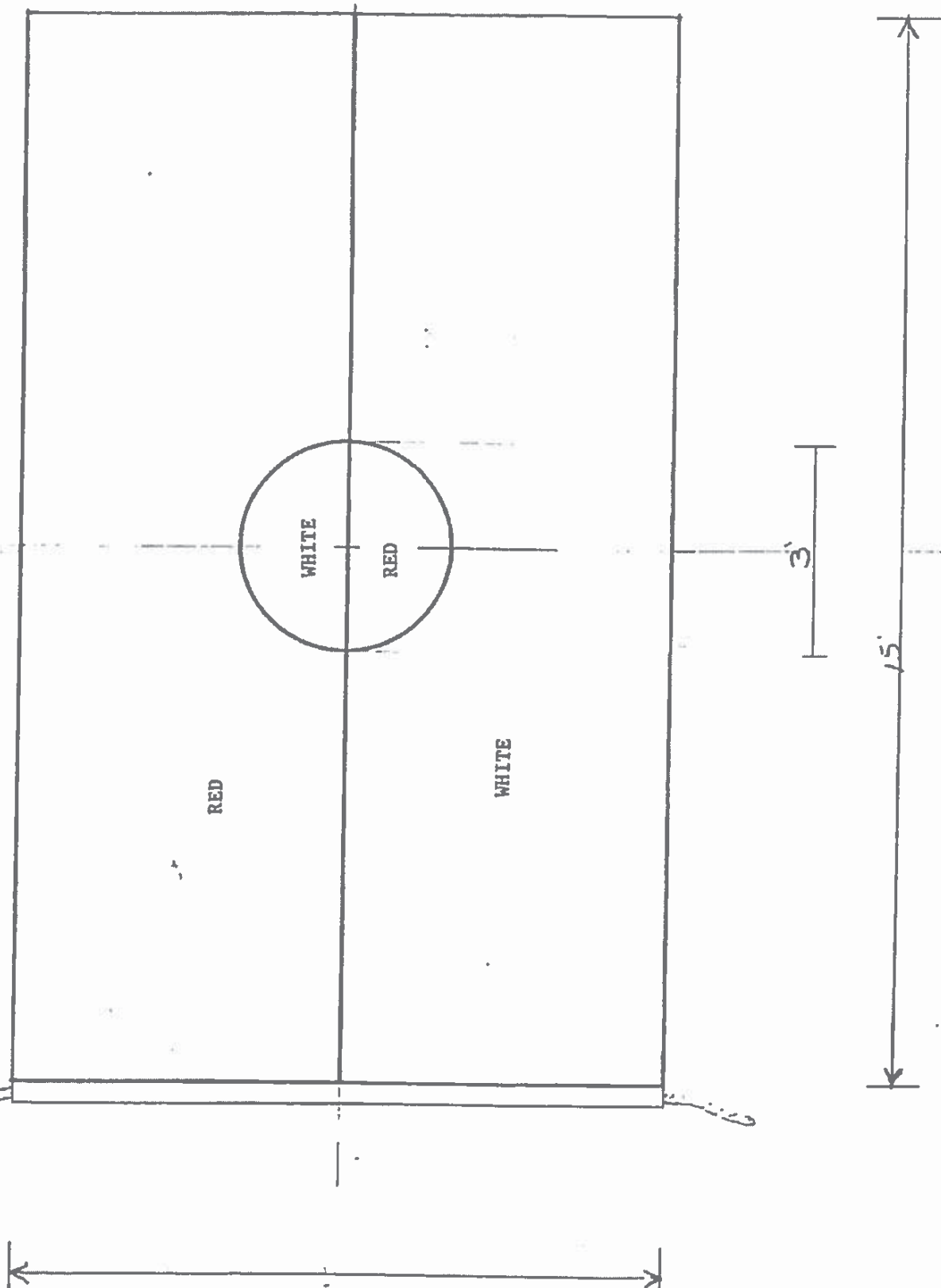
4



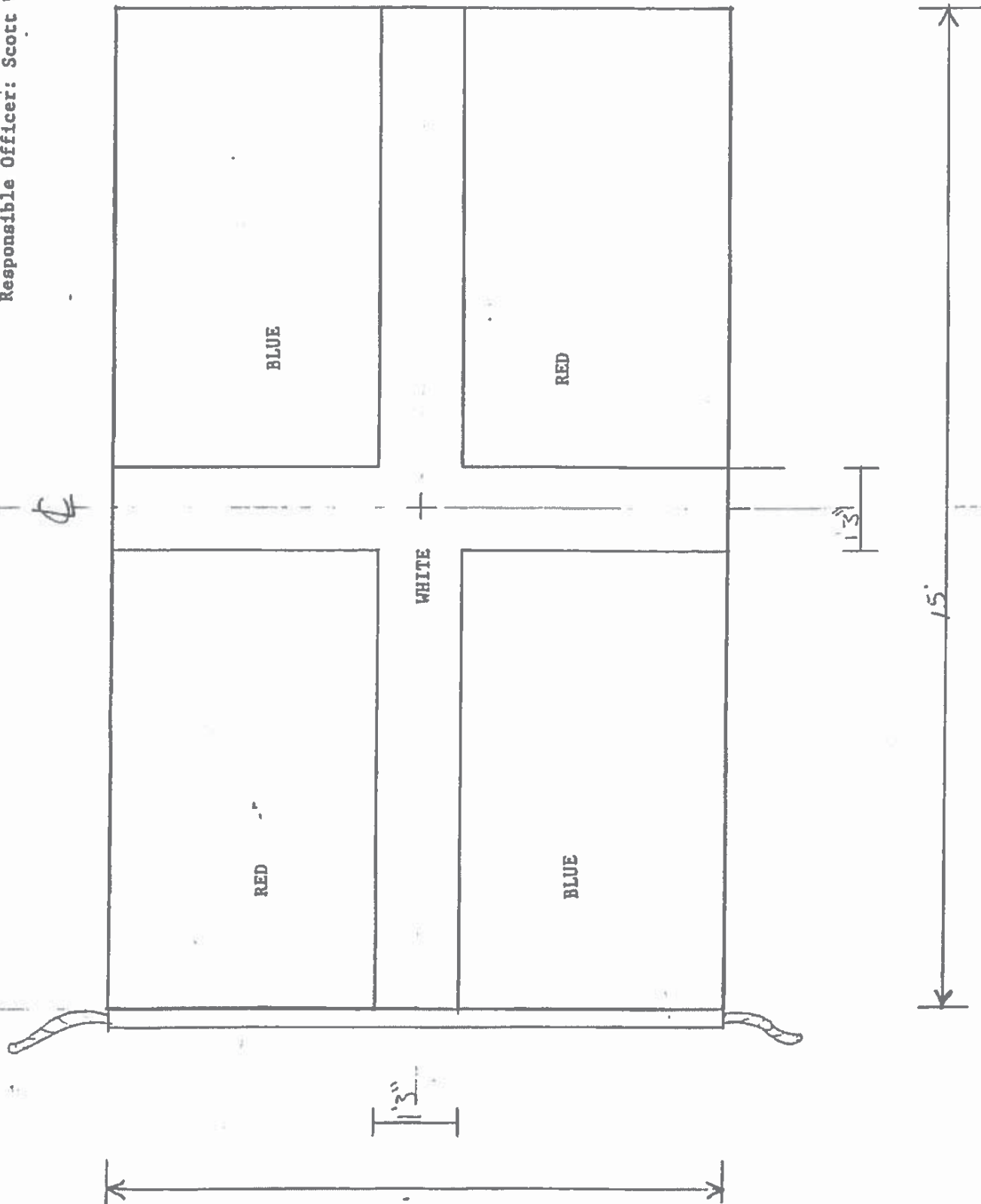
Design Based on Historic Chart  
Project Title: Commercial Signal Flags  
Drawing Title: *Cop Hunter Flag*  
Drawing Number: *F. 7*  
Responsible Officer: Scott Watson, ISO-HDC



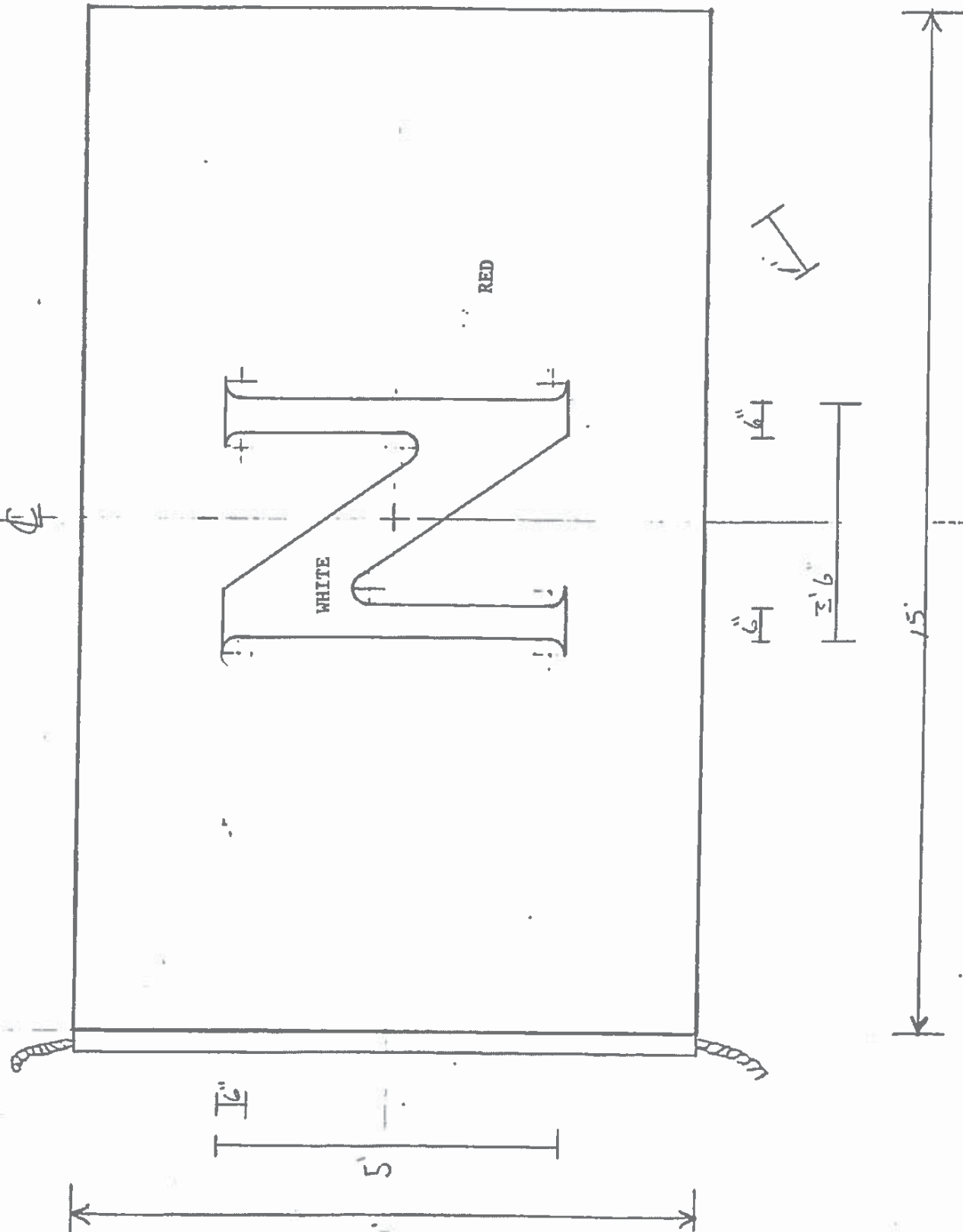
Drawn by: Matt Siemens      Scale: 1/2 inch  
Design Based on Historic Chart  
Project Title: Commercial Signal Flags  
Drawing Title: TAS. Dec Wofle + Son F143  
Drawing Number: F. 8  
Responsible Officer: Scott Watson, ISO-HDC



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

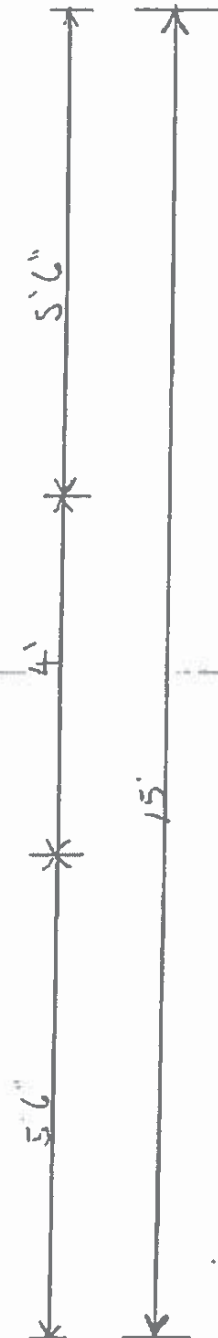
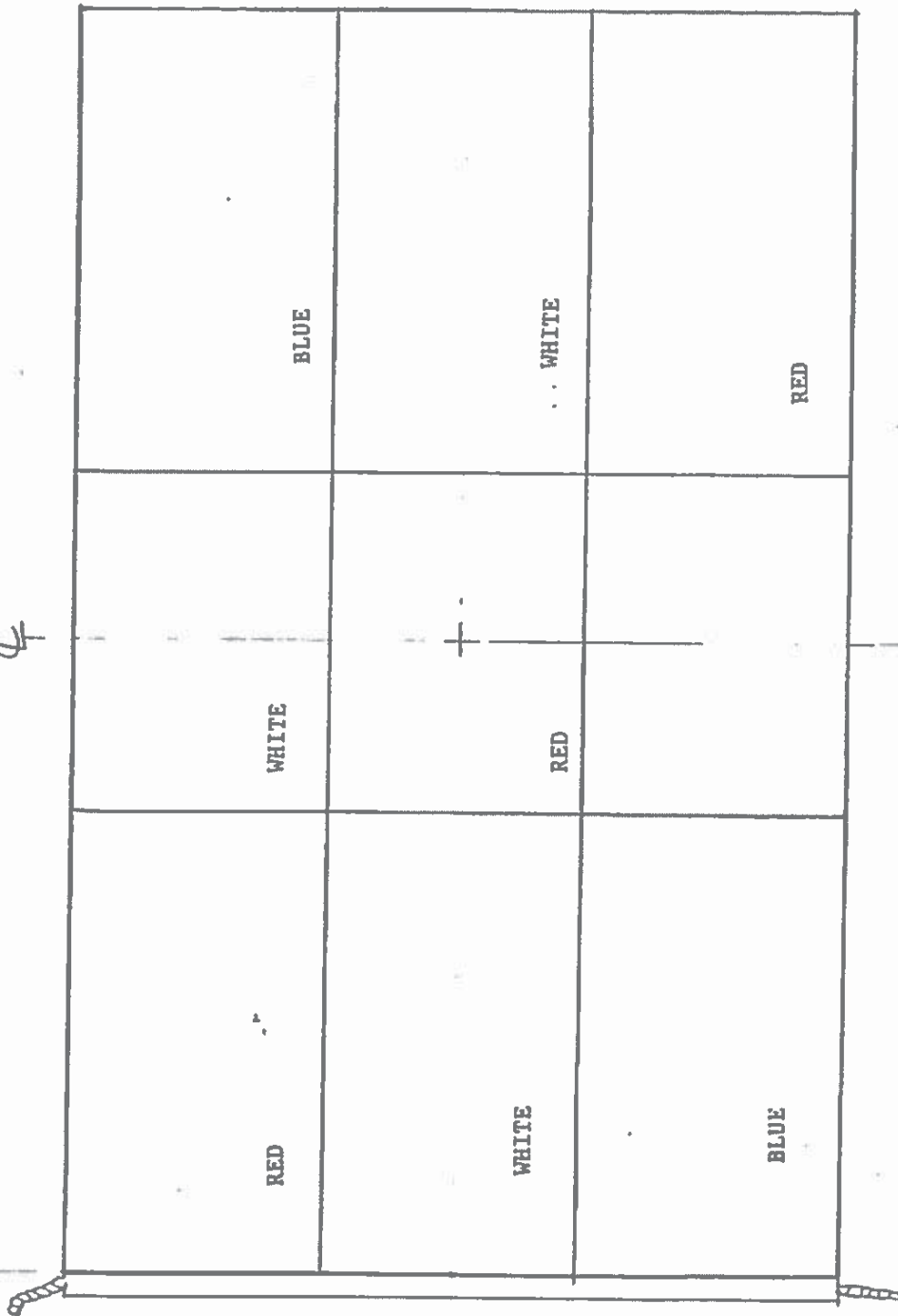


Drawn By: Matt Siemens      Scale: 1/2 inch  
Design Based on Historic Chart  
Project Title: Commercial Signal Flags  
Drawing Title: 10612 F11  
Drawing Number: F11  
Responsible Officer: Scott Watson, ISO-HDC



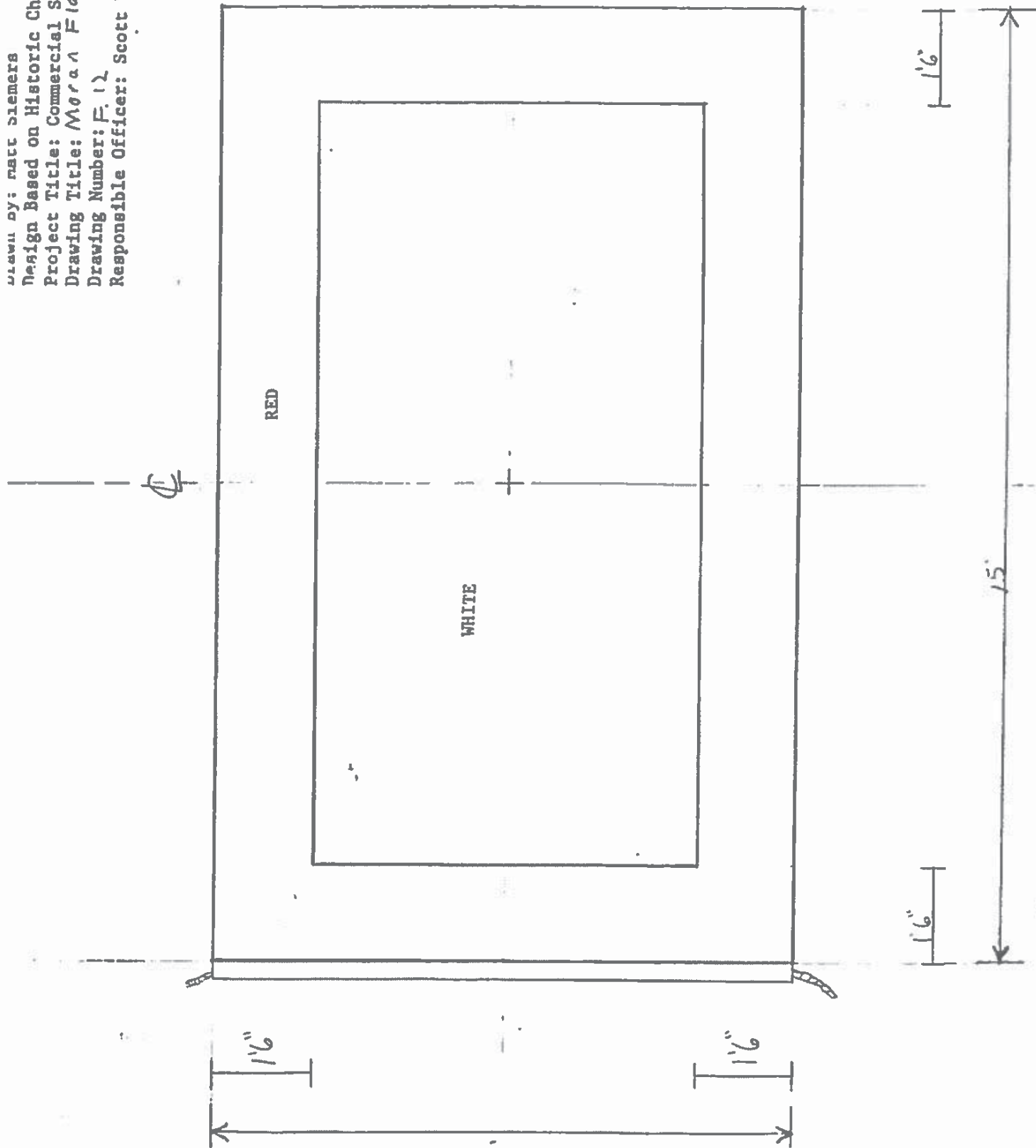
Design Based on Historic Chart  
 Project Title: Commercial Signal Flags  
 Drawing Title: B.W.I.E.R. & Co. Flag  
 Drawing Number: F 11  
 Responsible Officer: Scott Watson, ISO-HBC

Scale: 1 inch

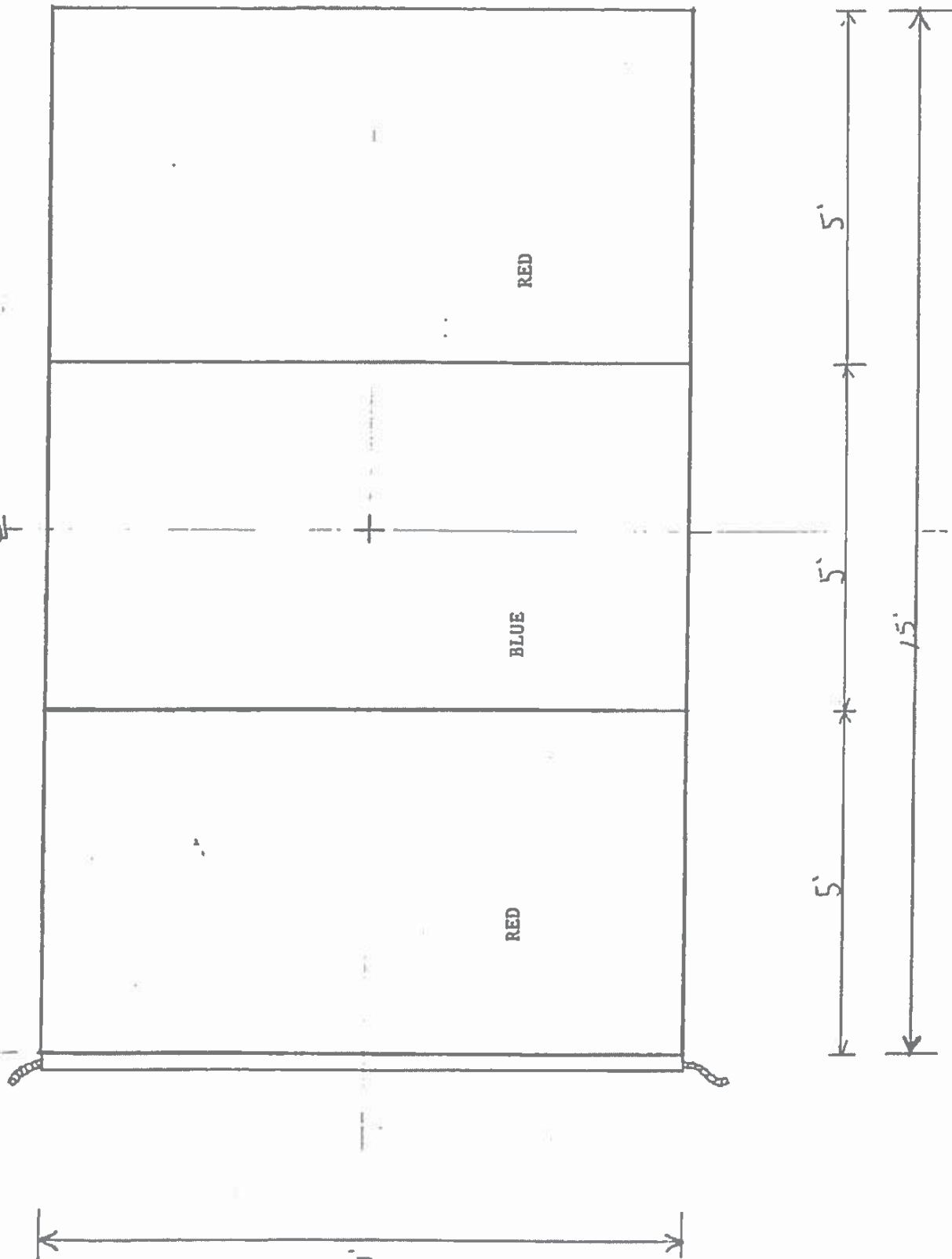


4

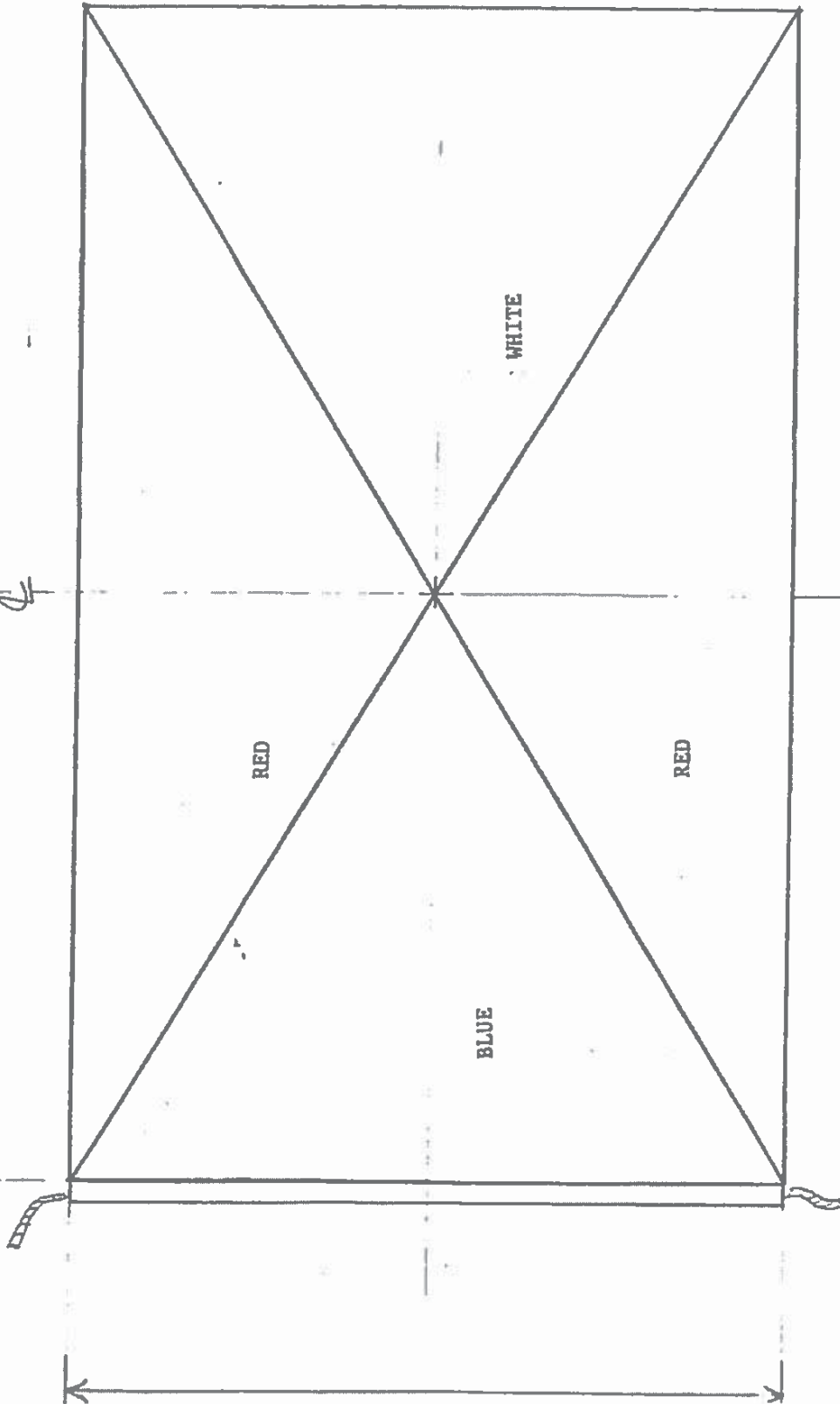
Drawn by: Matt Blumens  
Design Based on Historic Chart  
Project Title: Commercial Signal Flags  
Drawing Title: MORA 1 FIG 3  
Drawing Number: F-12  
Responsible Officer: Scott Watson, ISO-HBC



51

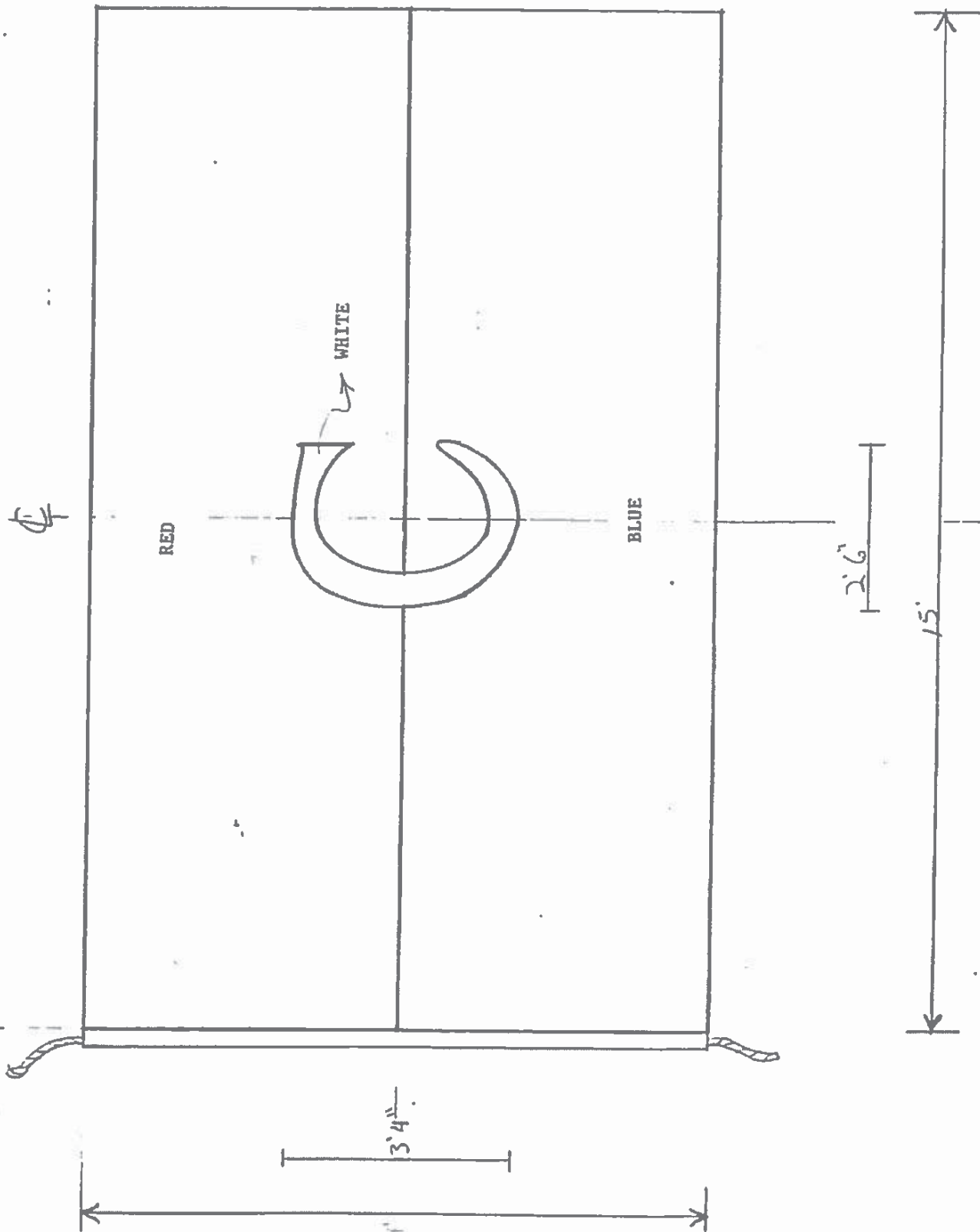


Drawn By: Matt Siemers      Scale: 1/4 inch  
Design Based on Historic Chart  
Project Title: Commercial Signal Flags  
Drawing Title: Duffus & Co., Flag  
Drawing Number: F. 16  
Responsible Officer: Scott Watson, ISO-HDC

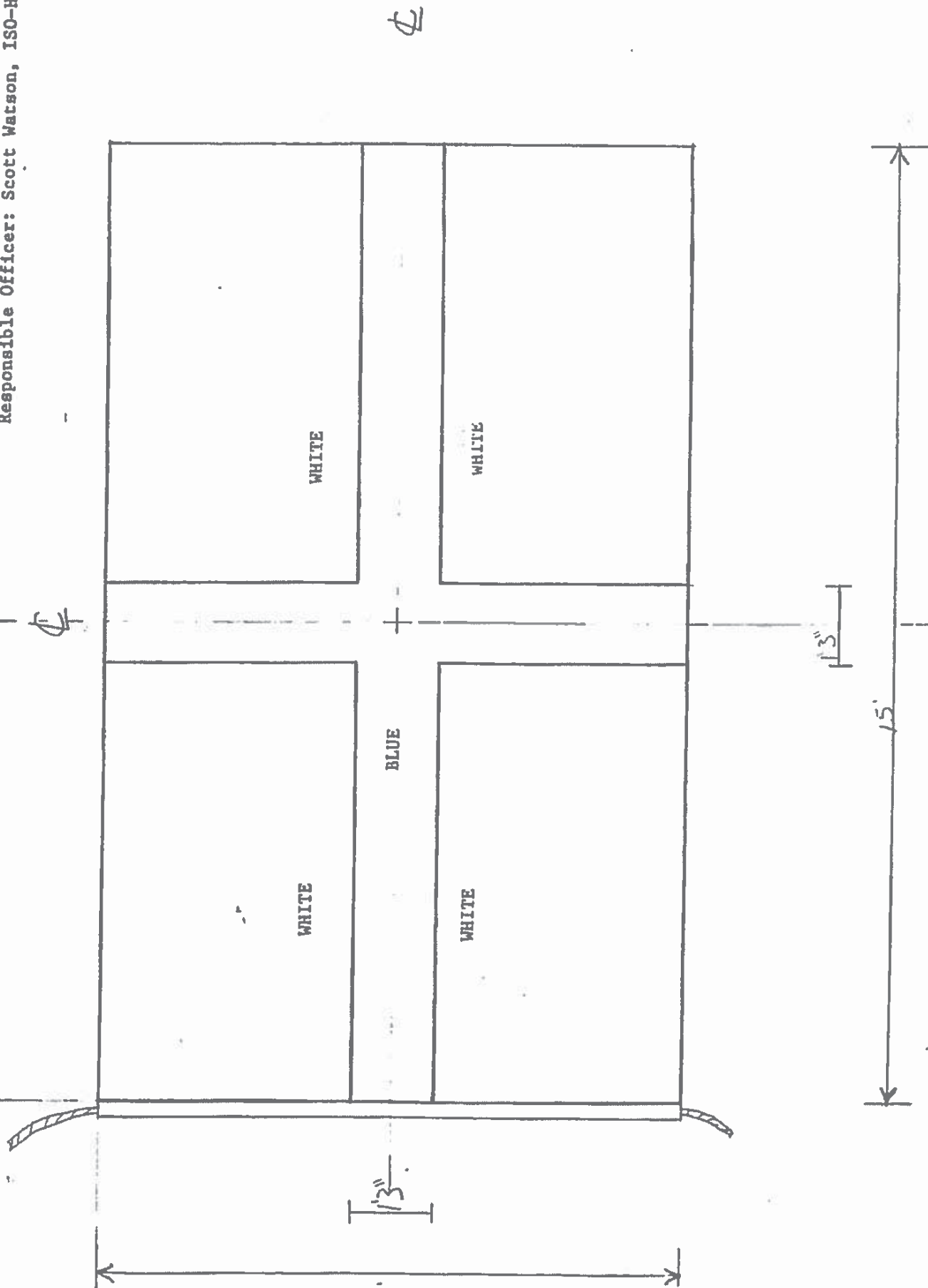


15"

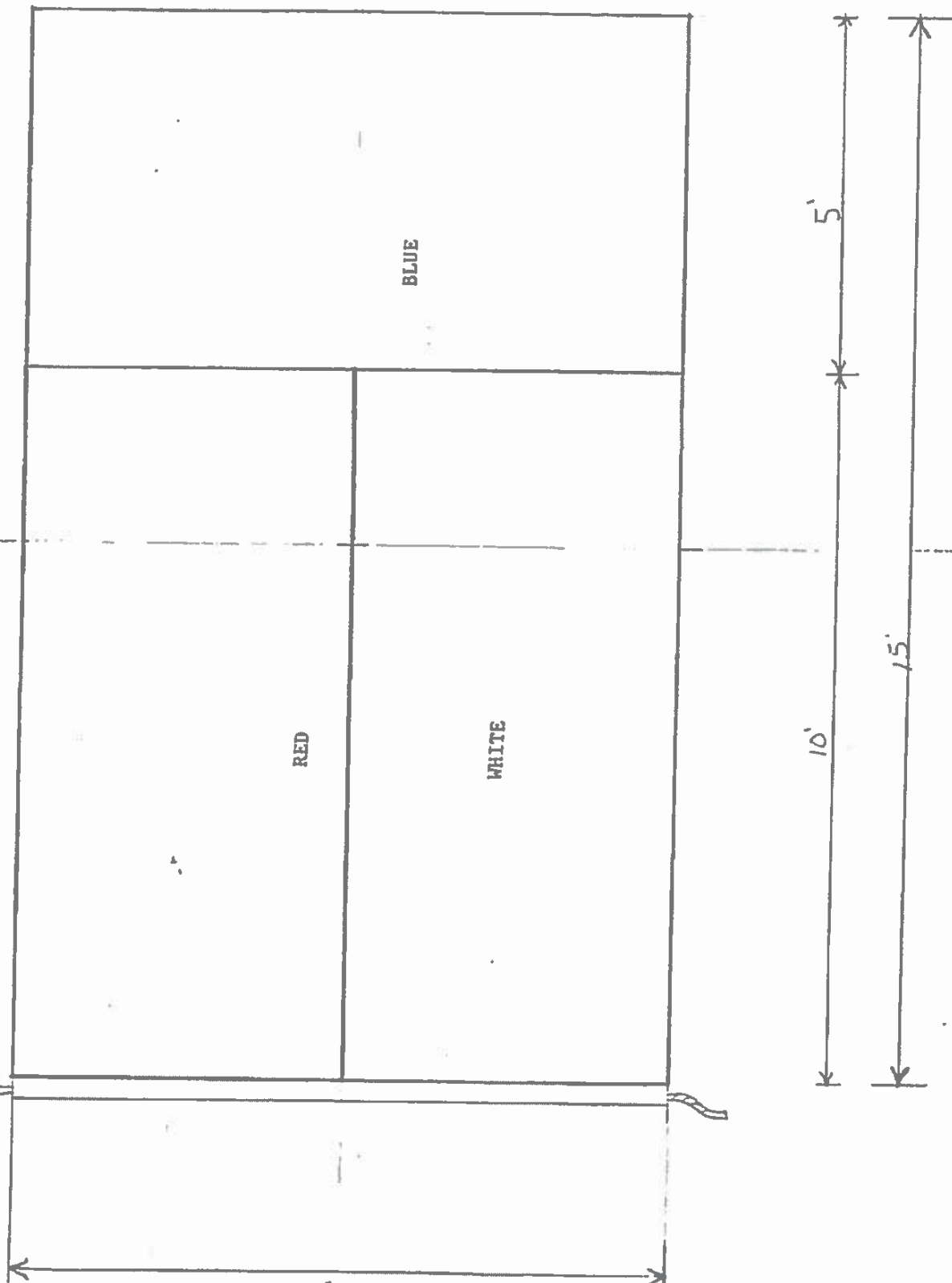
Drawn by: Matt Siemens Scale: 1/4 inch  
Design Based on Historic Chart  
Project Title: Commercial Signal Flags  
Drawing Title: Caldwell Flag  
Drawing Number: F17  
Responsible Officer: Scott Watson, ISO-HDC



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

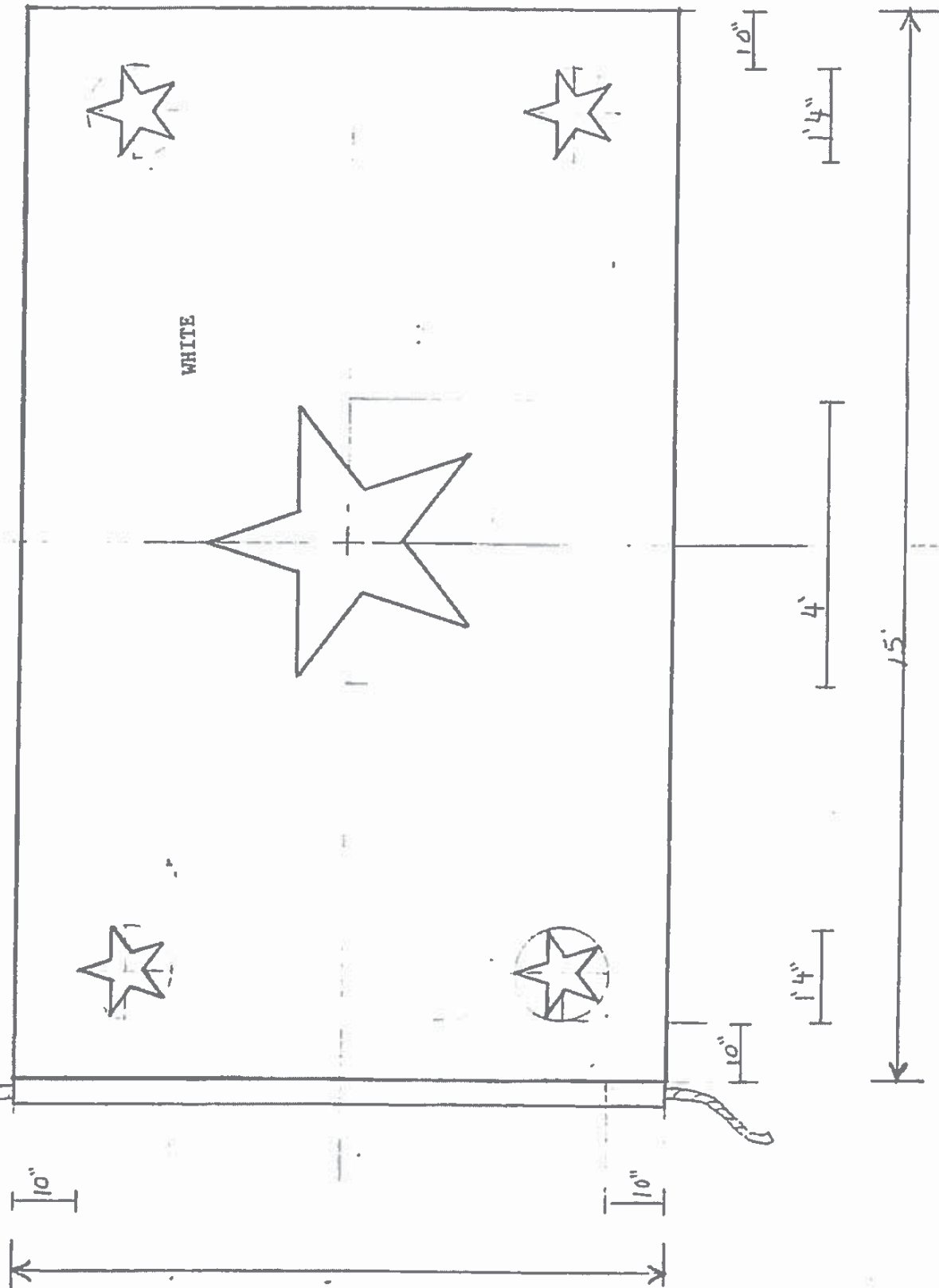


21



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

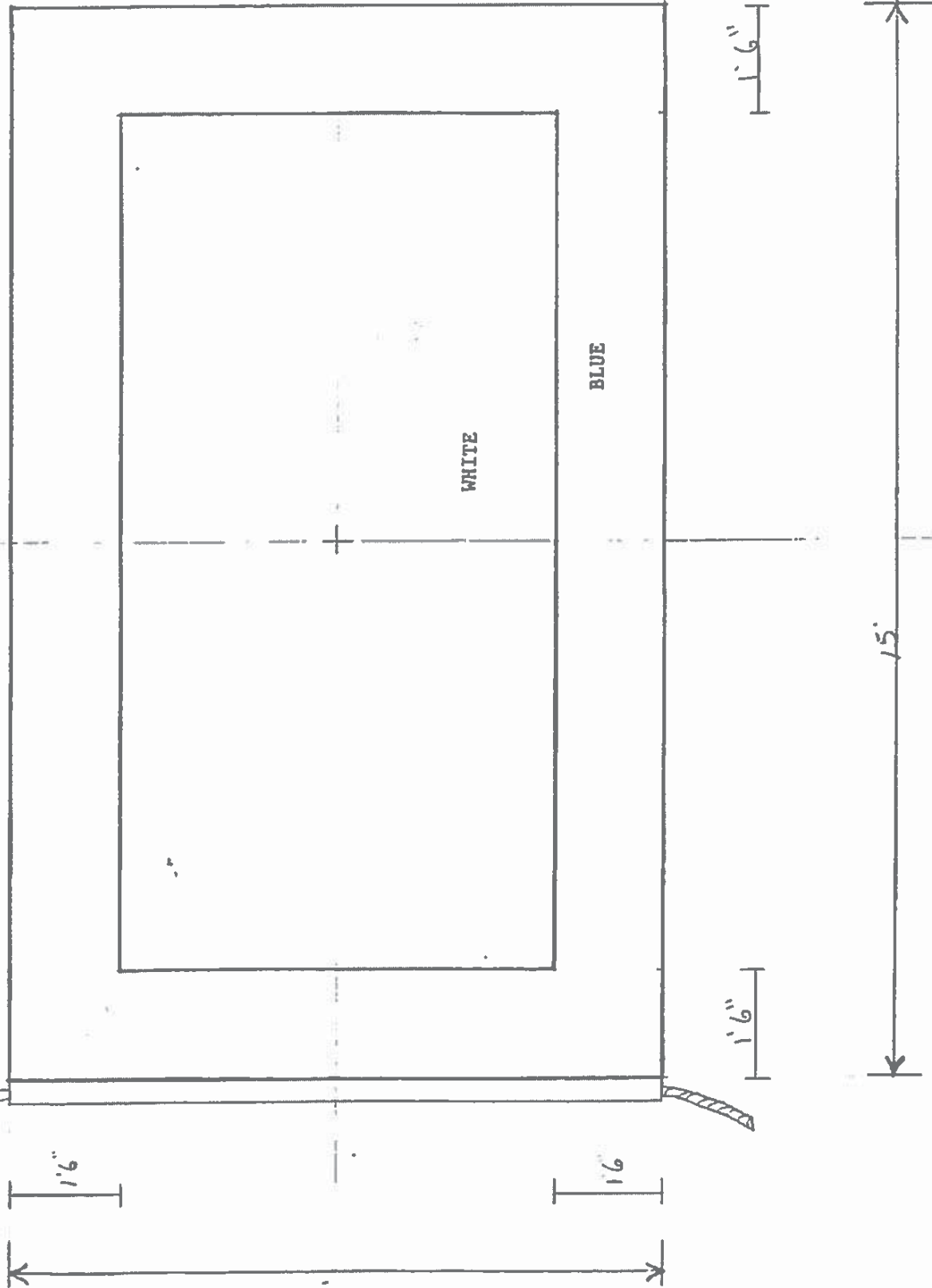
*All Stars are blue*



2

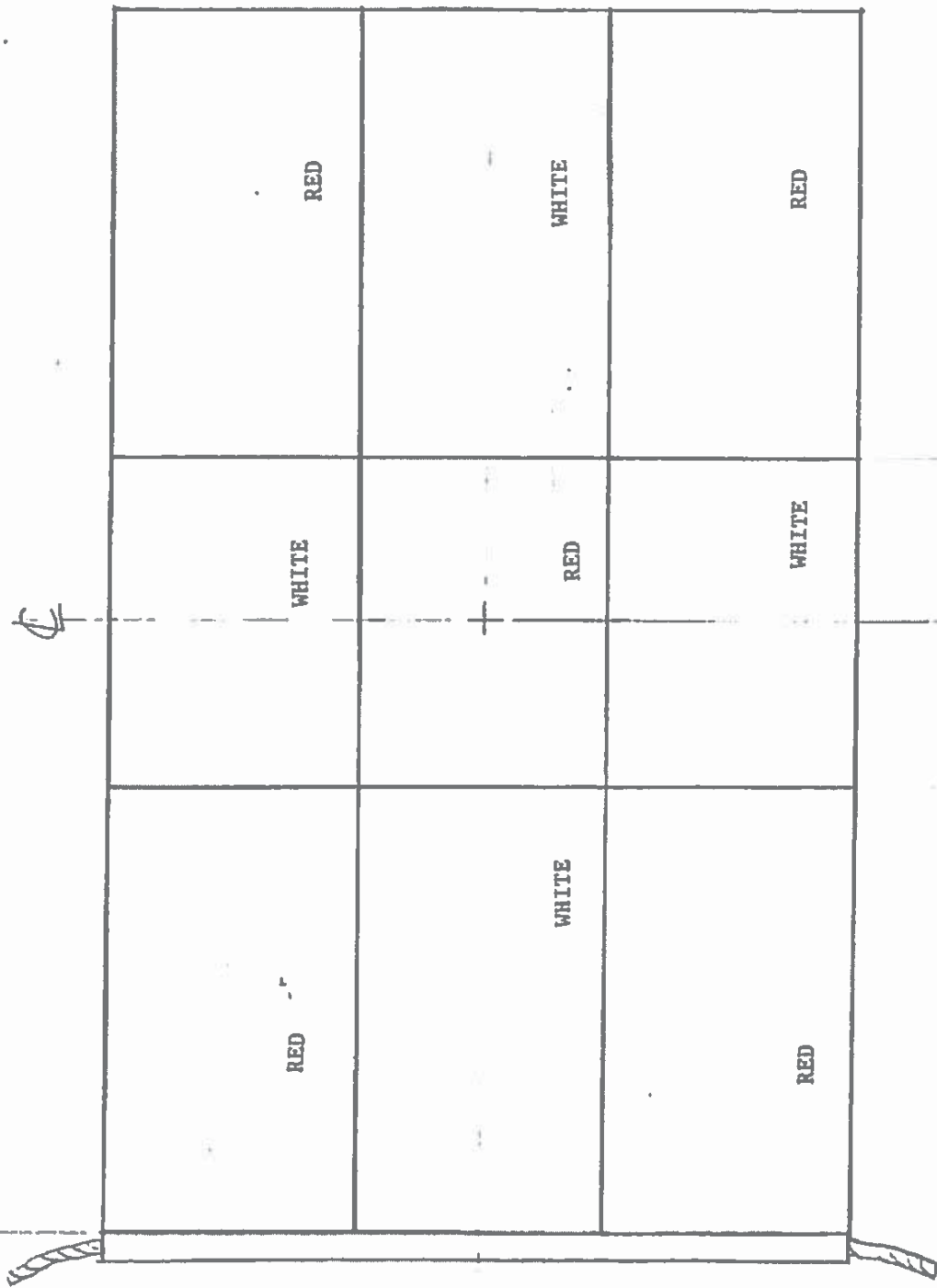


Design Based on Historic Chart  
Project Title: Commercial Signal Flags  
Drawing Title: Alpha 4 CD F 2  
Drawing Number: F22  
Responsible Officer: Scott Watson, ISO-HDC



Drawn by: Matt Siemers      Scale: 1/4 inch  
 Design Based on Historic Chart  
 Project Title: Commercial Signal Flags  
 Drawing Title: *Signal & Color*  
 Drawing Number: *F.23*  
 Responsible Officer: Scott Watson, ISO-HDC

②

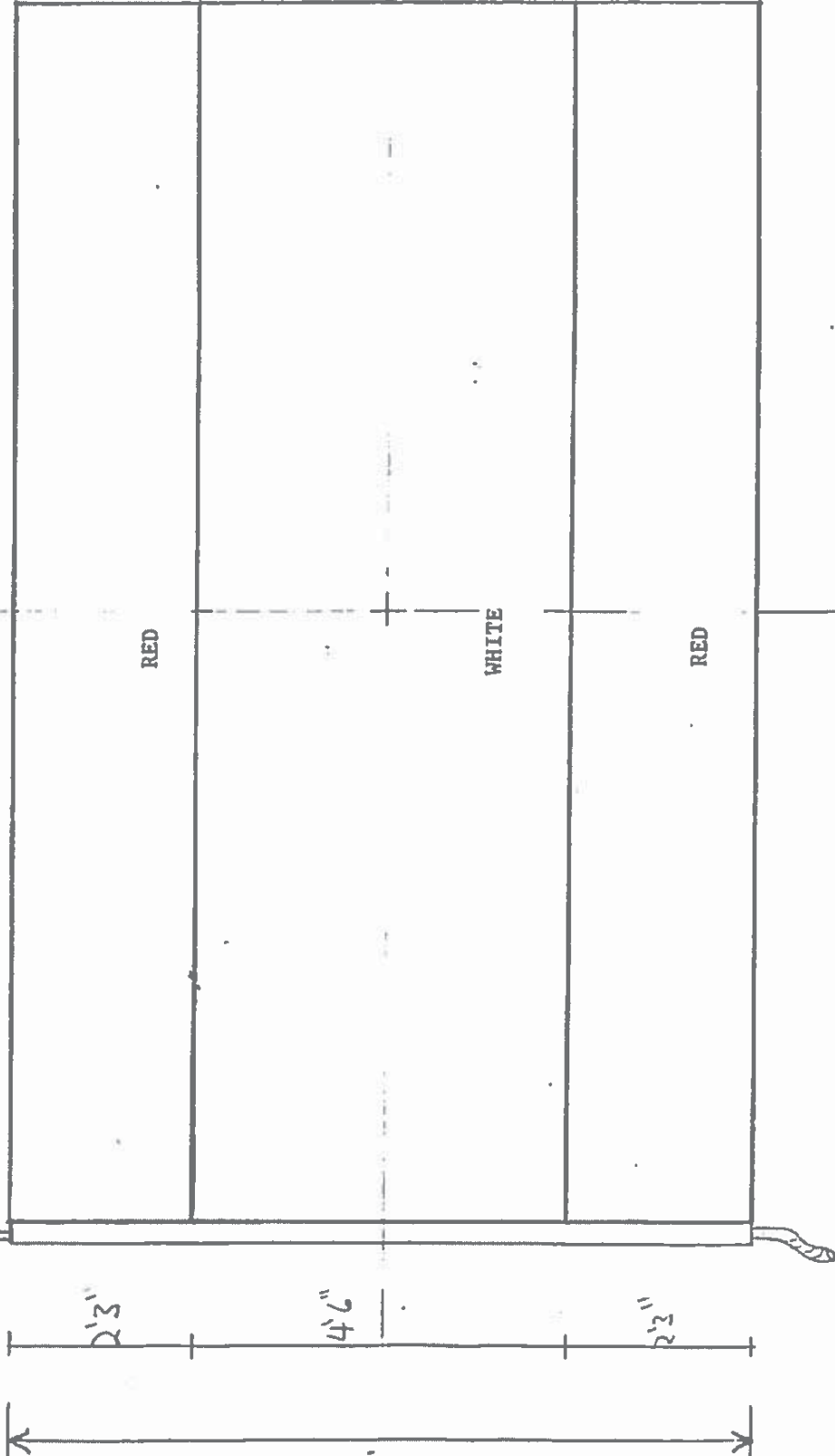


3'      3'      3'

5'6"      4'      5'6"

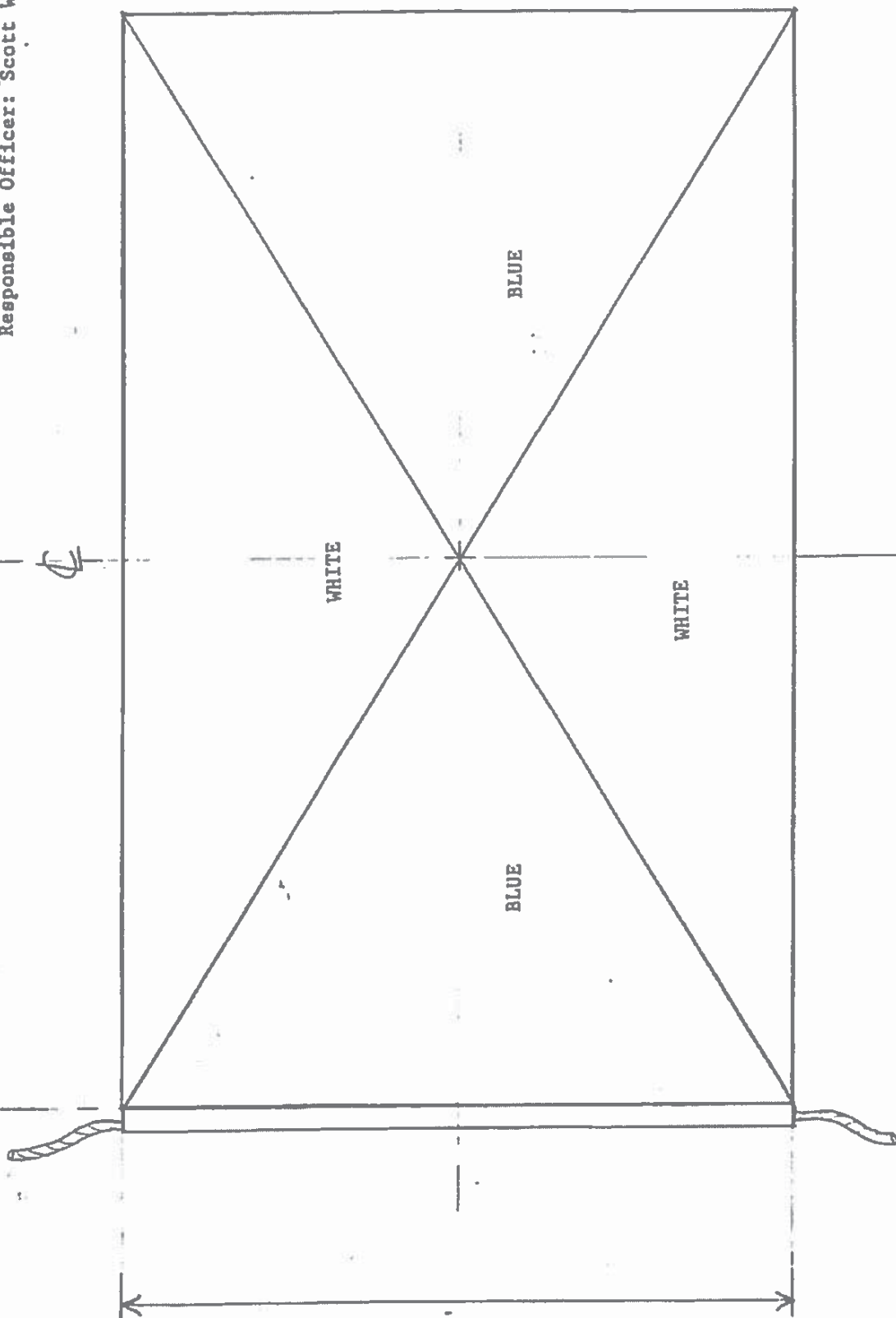
15'

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

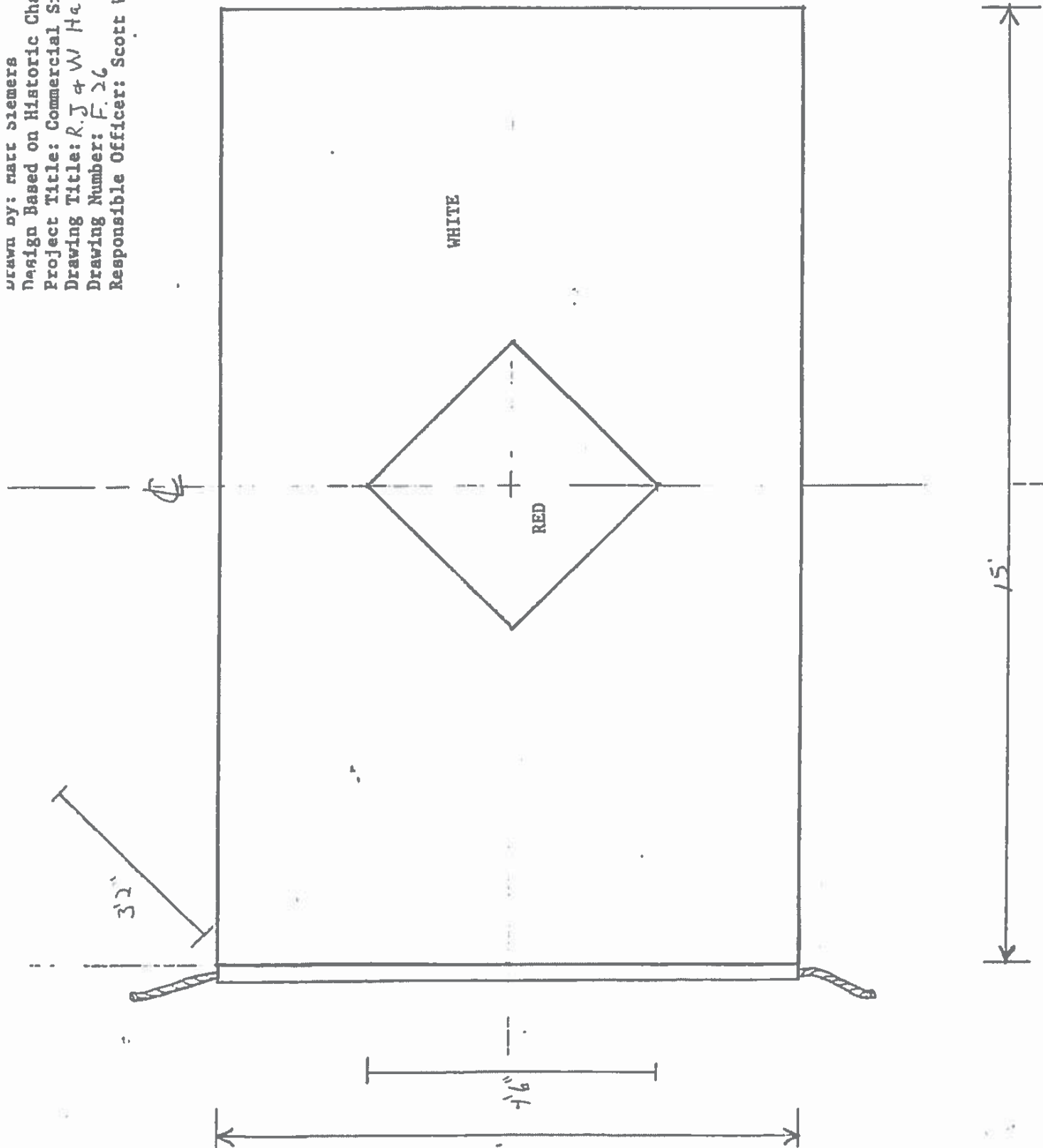


2

Drawn by: *Small* *Diagram* Scale: 1 in = 1 in  
Design Based on Historic Chart  
Project Title: Commercial Signal Flags  
Drawing Title: *W* *Lawson* *Flag*  
Drawing Number: *F. 25*  
Responsible Officer: Scott Watson, ISO-HBC

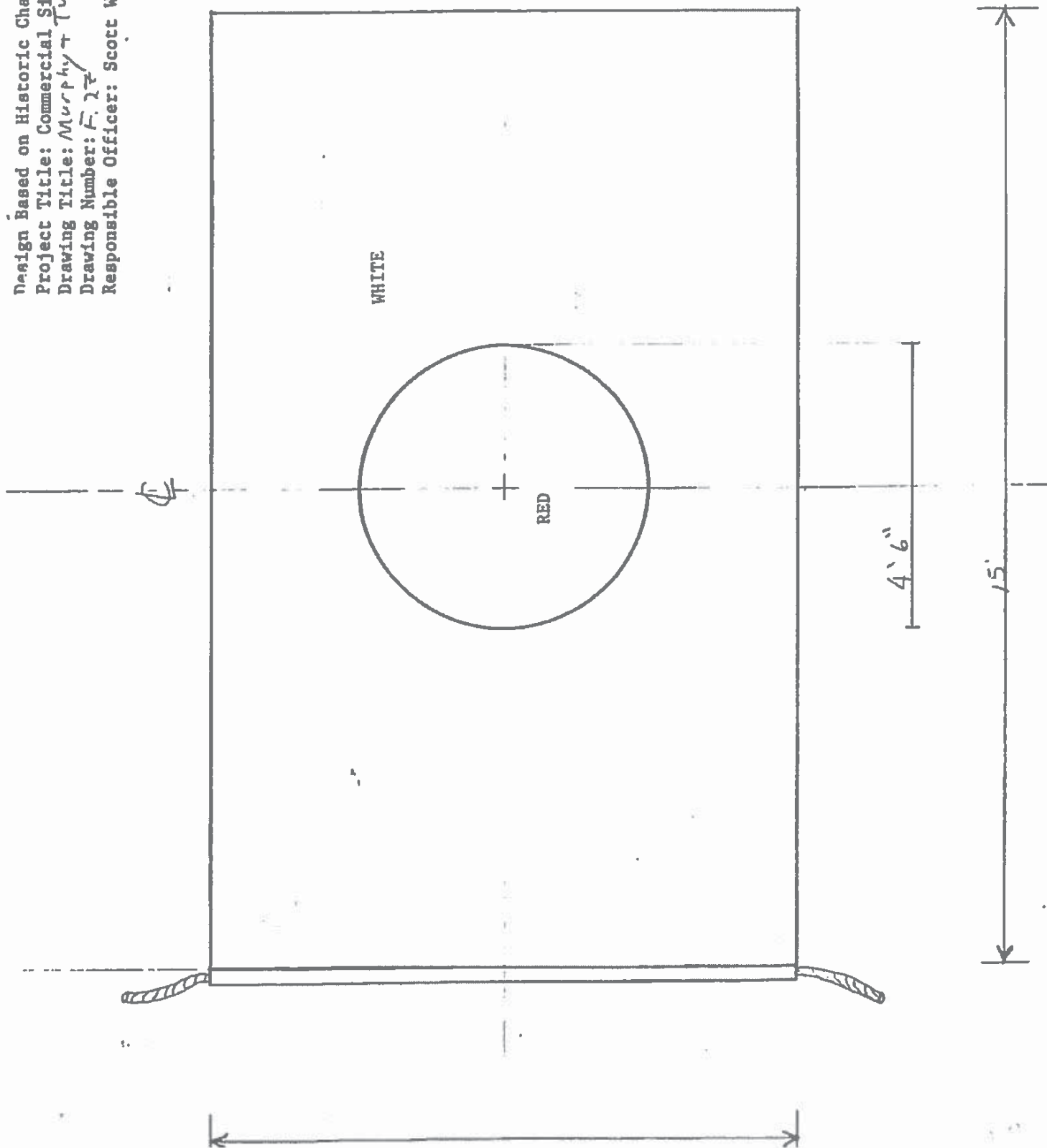


Drawn by: Matt Siemers      Scale: 1/4 inch  
Design Based on Historic Chart  
Project Title: Commercial Signal Flags  
Drawing Title: R, J & W Hart Flag  
Drawing Number: F.26  
Responsible Officer: Scott Watson, ISO-HDC

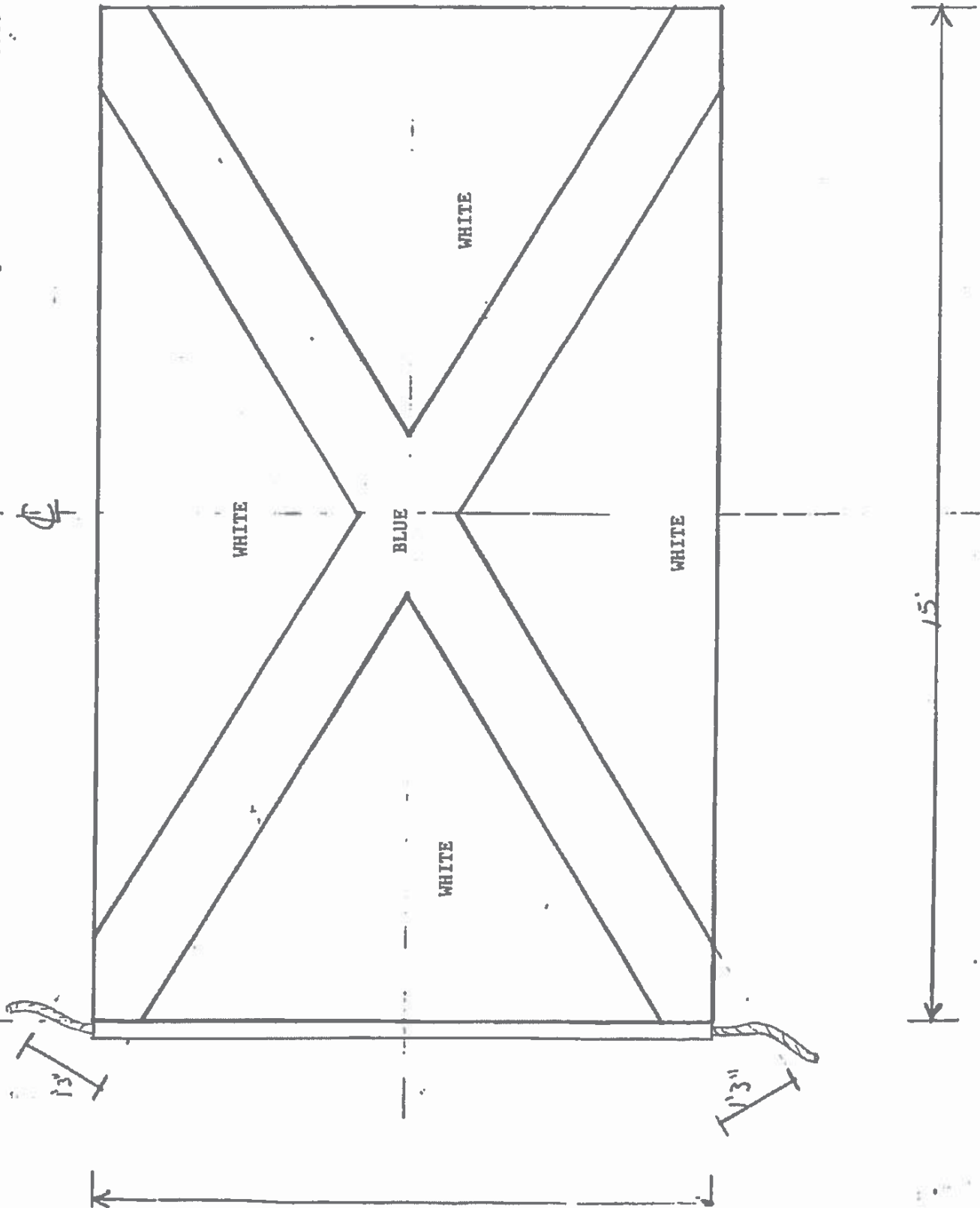


Design Based on Historic Chart  
Project Title: Commercial Signal Flags  
Drawing Title: *Murphy + Twining Flag*  
Drawing Number: *F. 27*  
Responsible Officer: Scott Watson, ISO-HDC

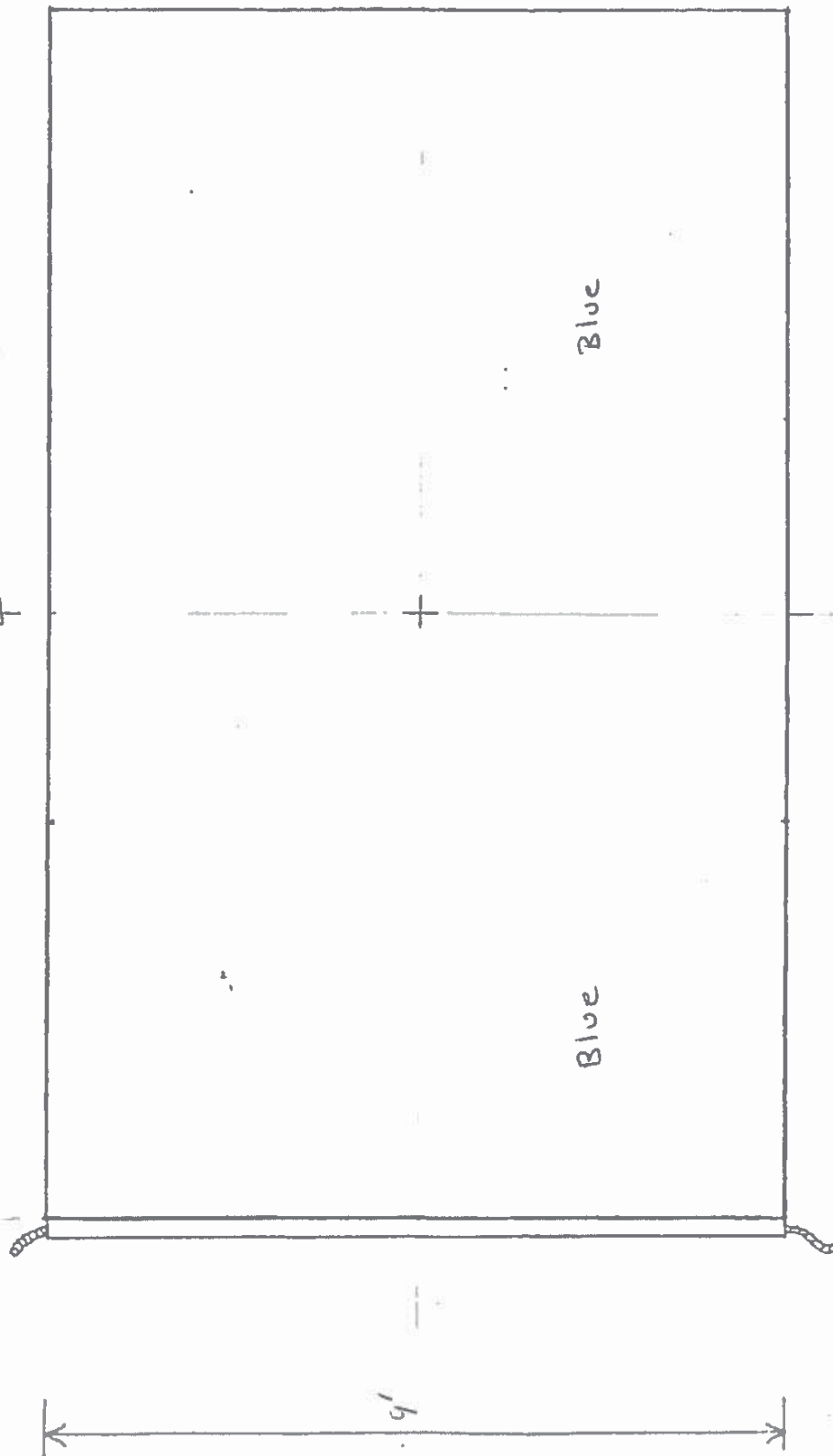
*2*



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

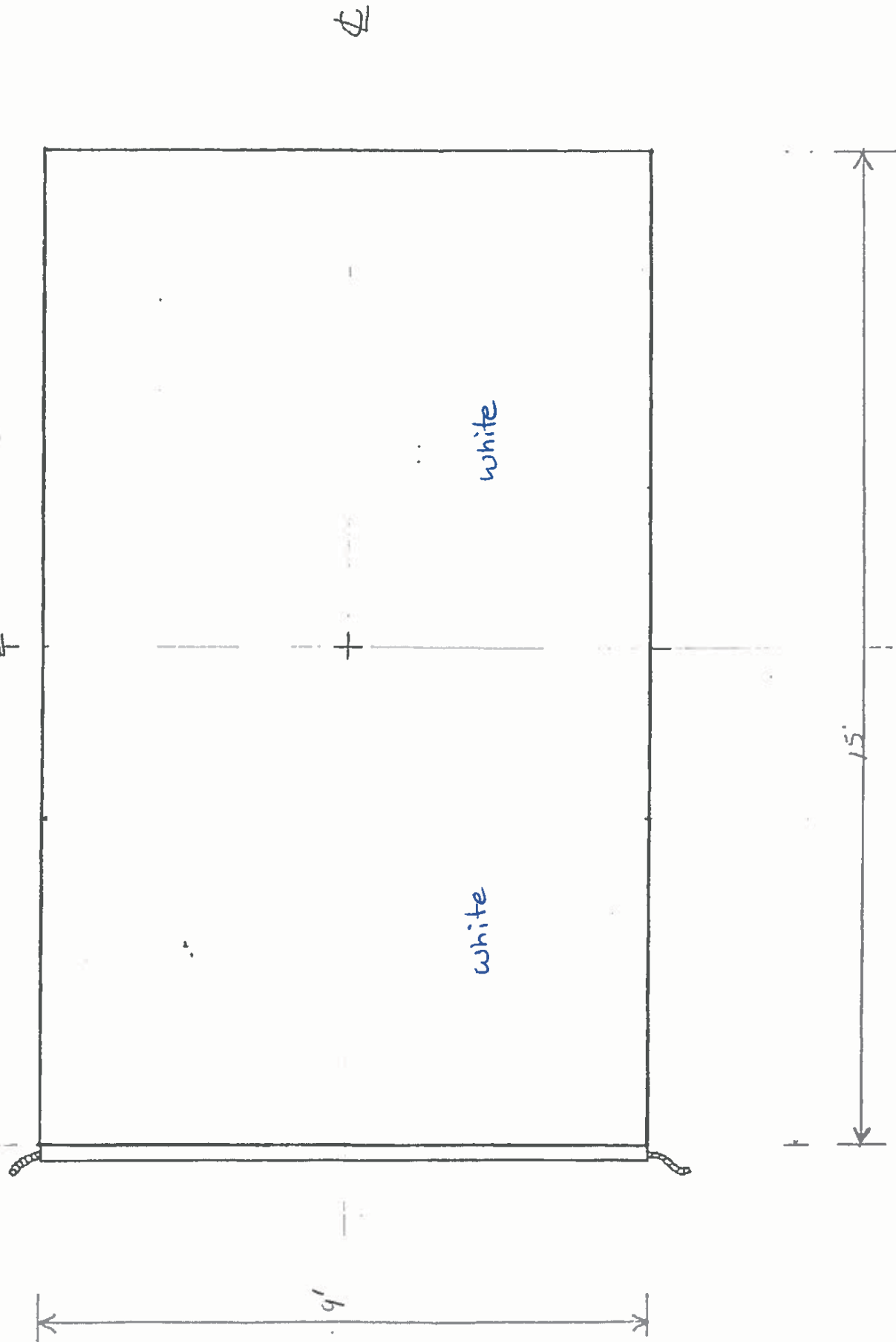


Drawn by: Matt Clemens Scale: 1/4 inch  
Design Based on Historic Chart  
Project Title: Commercial Signal Flags  
Drawing Title: Neutral Merchantman  
Drawing Number:  
Responsible Officer: Scott Watson, ISO-HDC

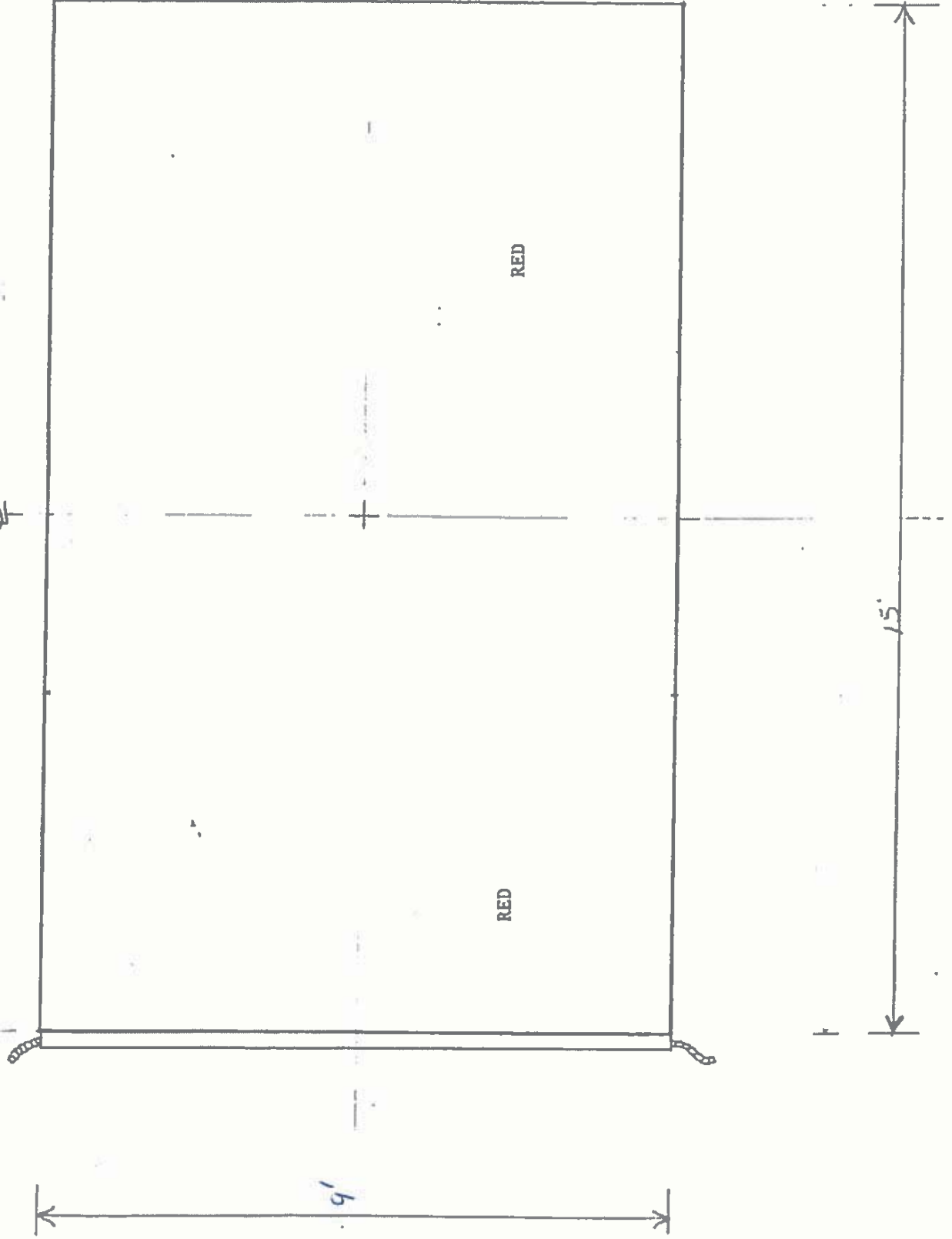


4

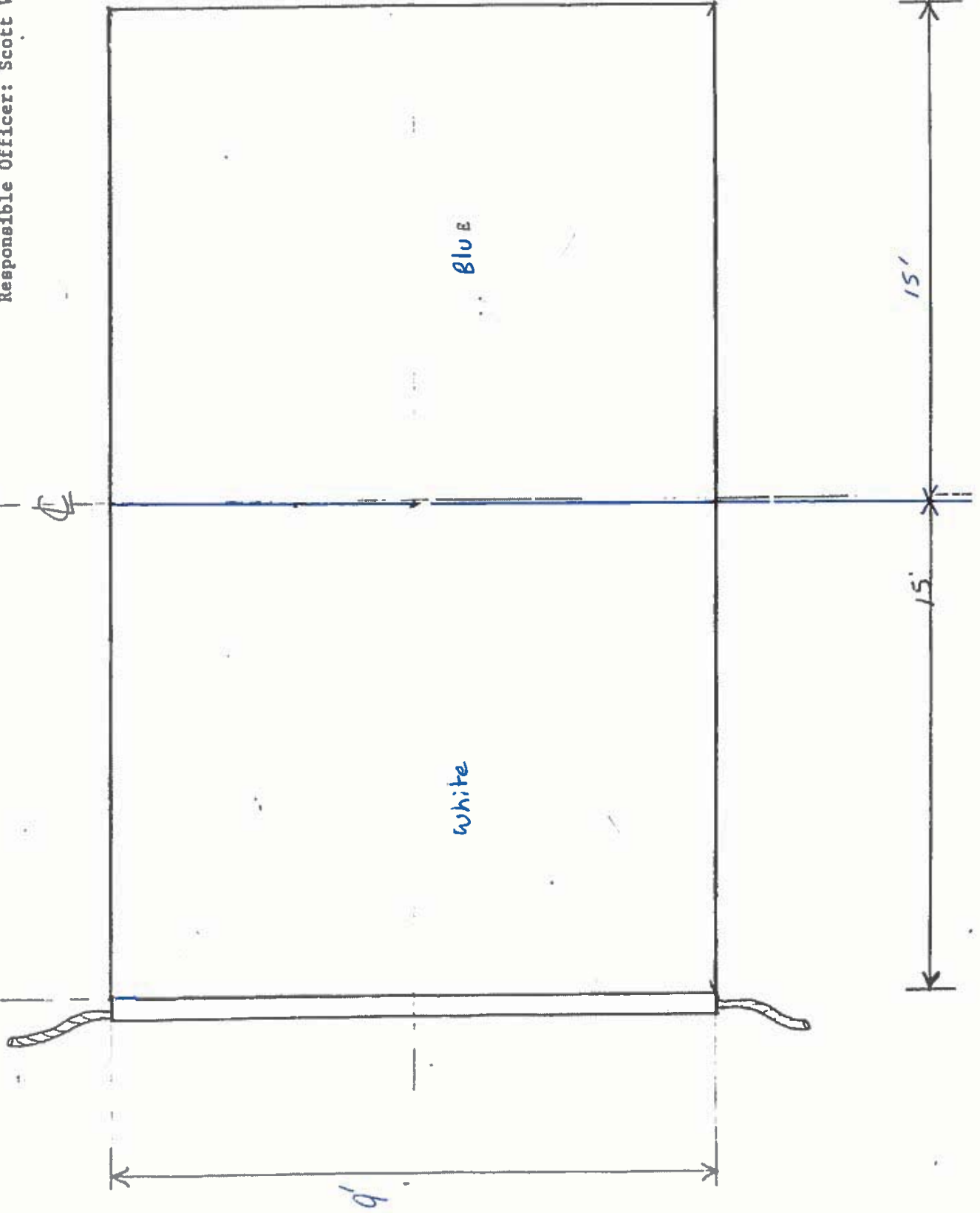
Drawn by: Matt Clemens Scale: 1/4 inch  
Design Based on Historic Chart  
Project Title: Commercial Signal Flags  
Drawing Title: *Flag of Truce*  
Drawing Number:  
Responsible Officer: Scott Watson, ISO-HDC



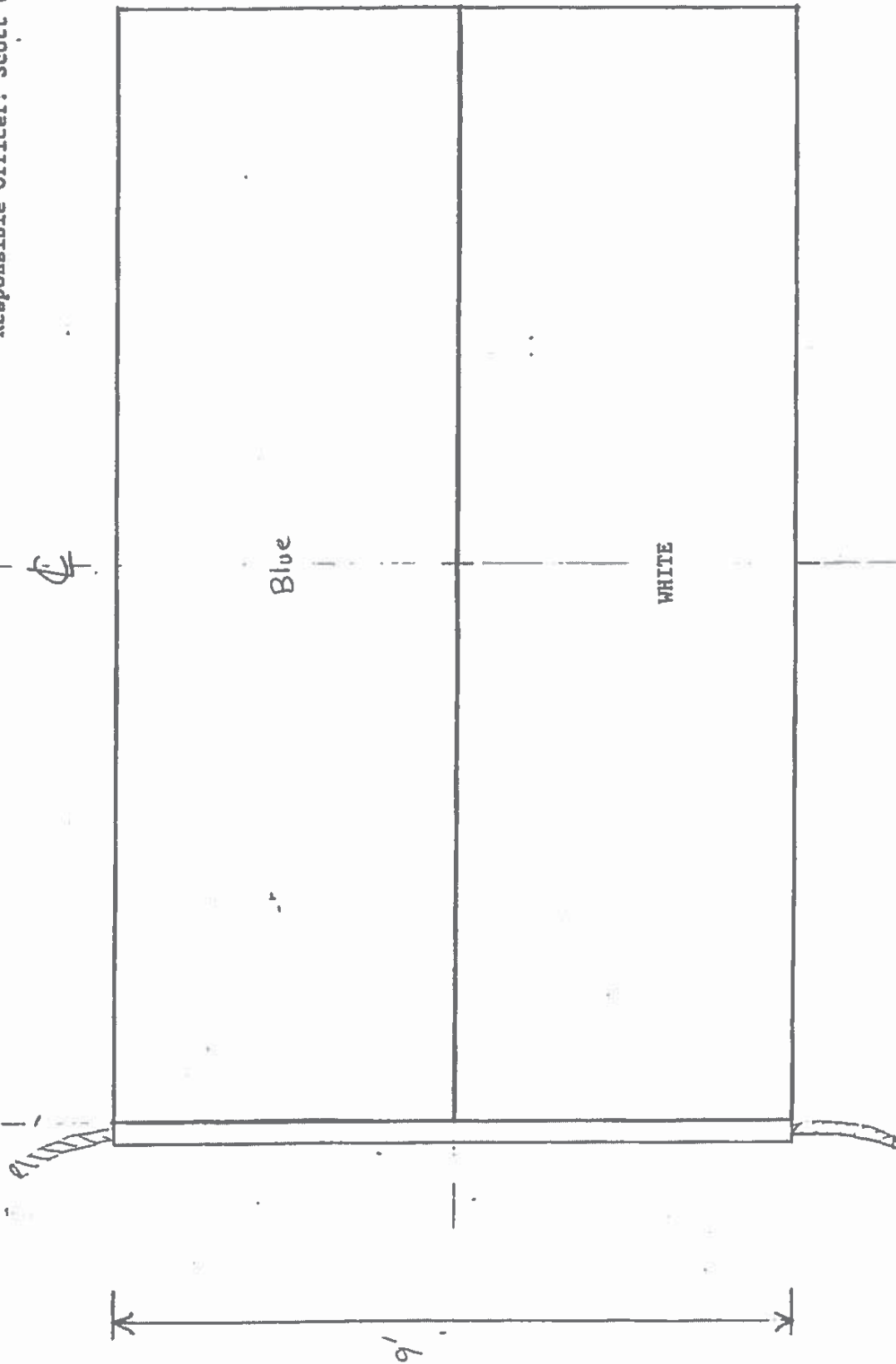
Drawn by: Matt Clements      Scale: 1/4 inch  
Design Based on Historic Chart  
Project Title: Commercial Signal Flags  
Drawing Title: *Enemy's Merchantman*  
Drawing Number:  
Responsible Officer: Scott Watson, ISO-HDC



Drawn by: Matt Bremers 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

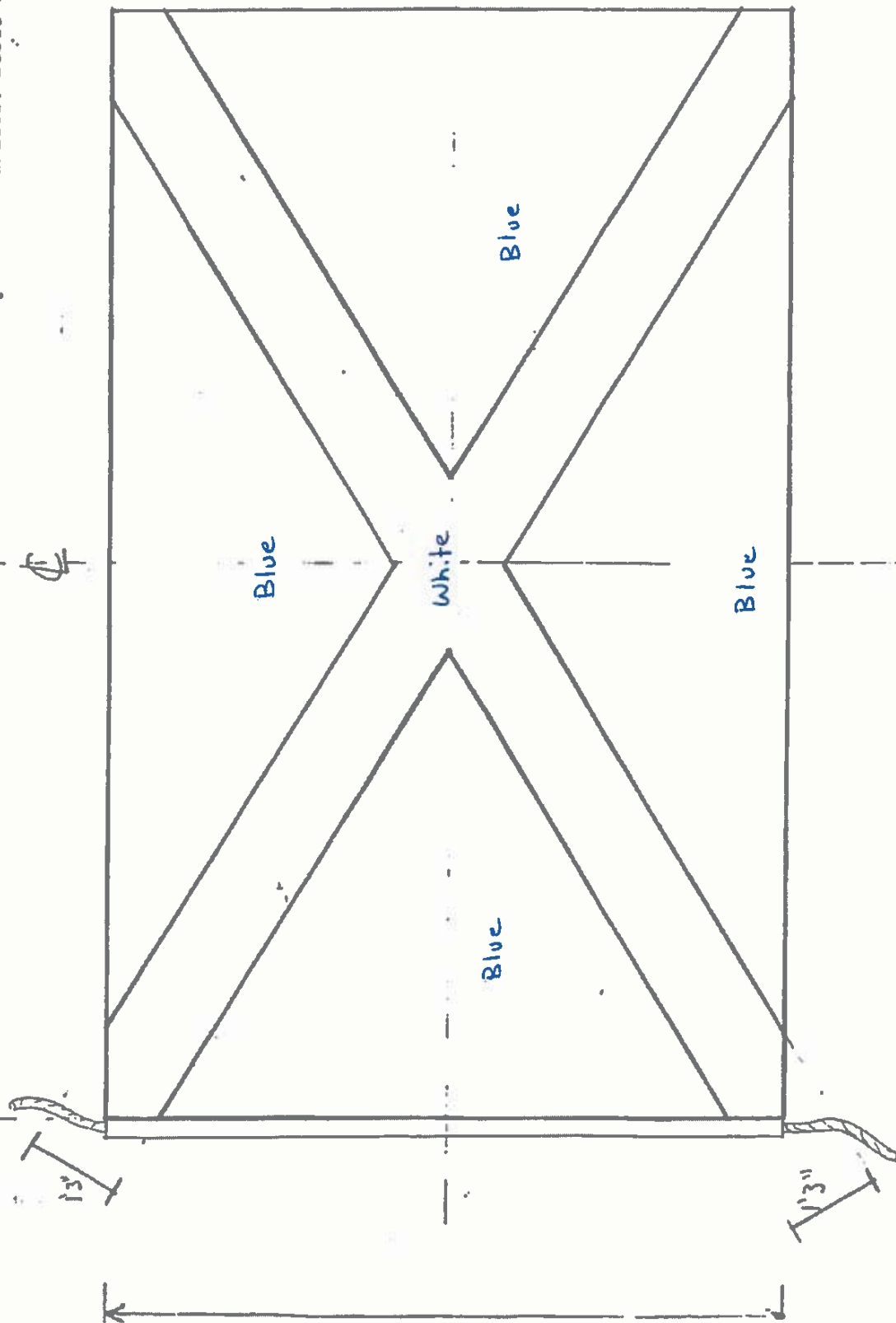


Drawn By: Matt Siemens      Scale: 1/2 inch  
Design Based on Historic Chart  
Project Title: Commercial Signal Flags  
Drawing Title: *Pyror + Son*  
Drawing Number:  
Responsible Officer: Scott Watson, ISO-HDC

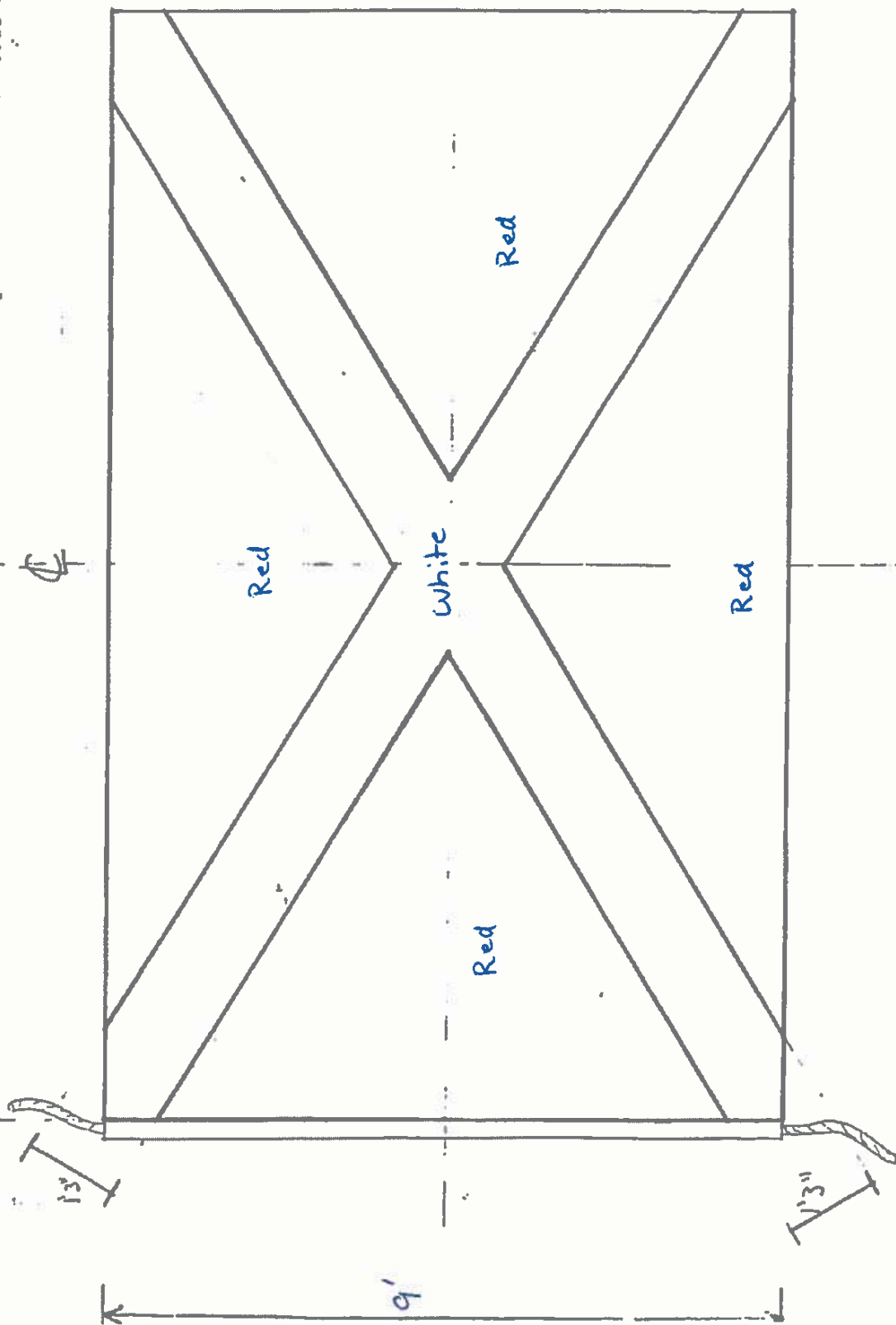


②

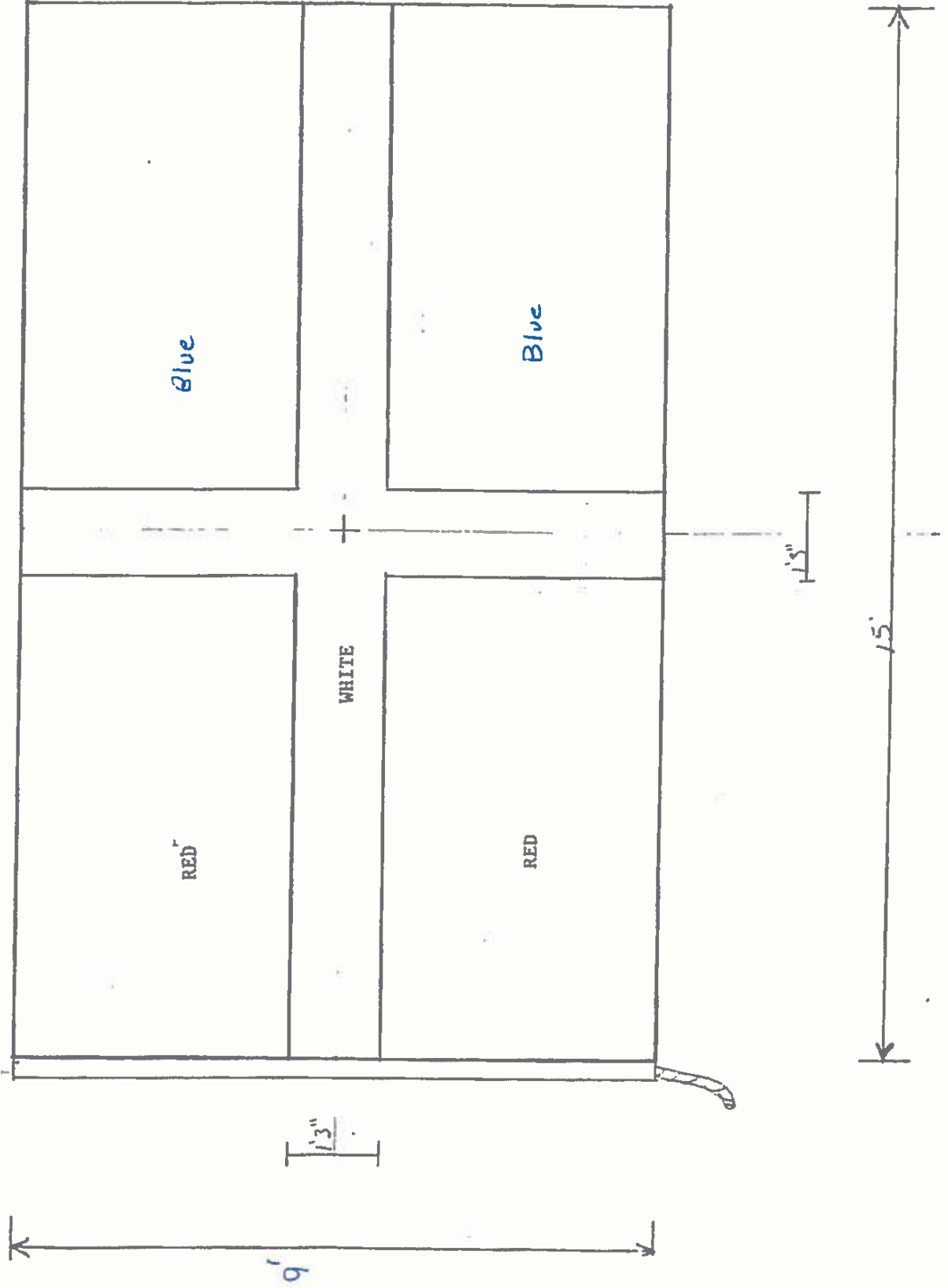
Design Based on Historic Chart  
Project Title: Commercial Signal Flags  
Drawing Title: Essex Boak & Co  
Drawing Number:  
Responsible Officer: Scott Watson, ISO-HDC



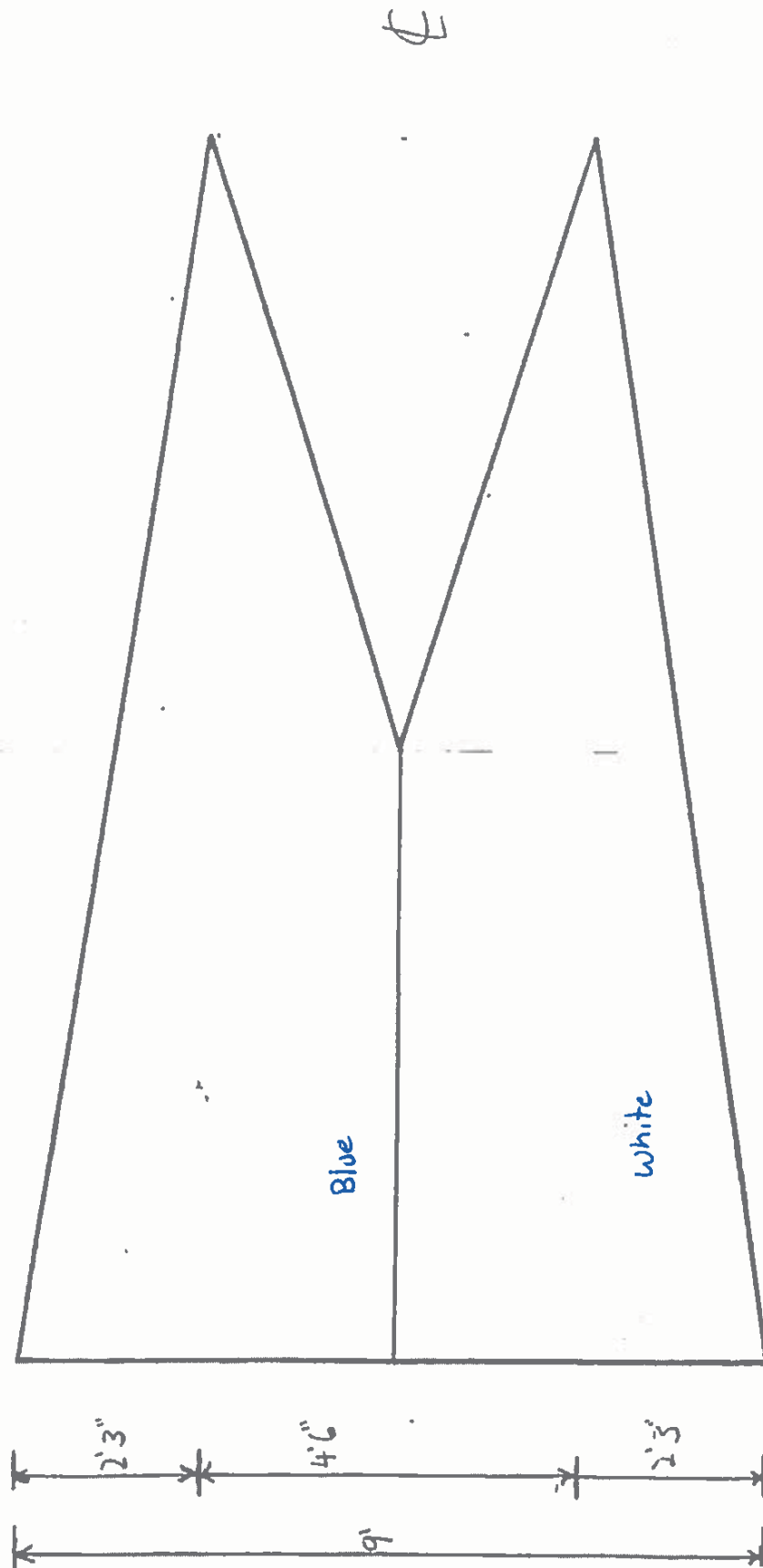
Design Based on Historic Chart  
Project Title: Commercial Signal Flags  
Drawing Title: J G A Creighton + Co  
Drawing Number:  
Responsible Officer: Scott Watson, ISO-HDC



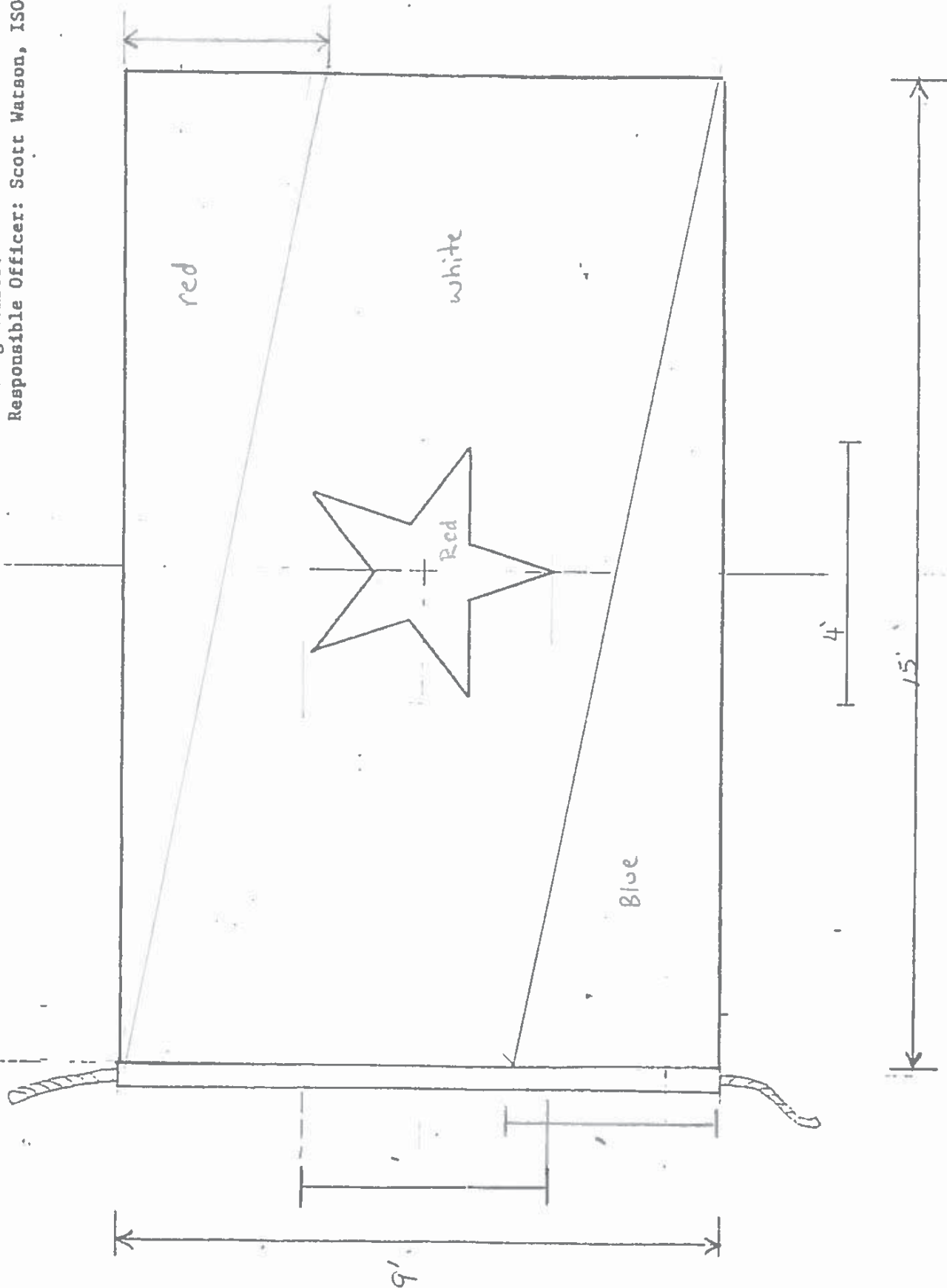
Drawn by: Russ Stiemers Scale: 1/4 inch  
Design Based on Historic Chart  
Project Title: Commercial Signal Flags  
Drawing Title: Wm Hare  
Drawing Number:  
Responsible Officer: Scott Watson, ISO-HDC



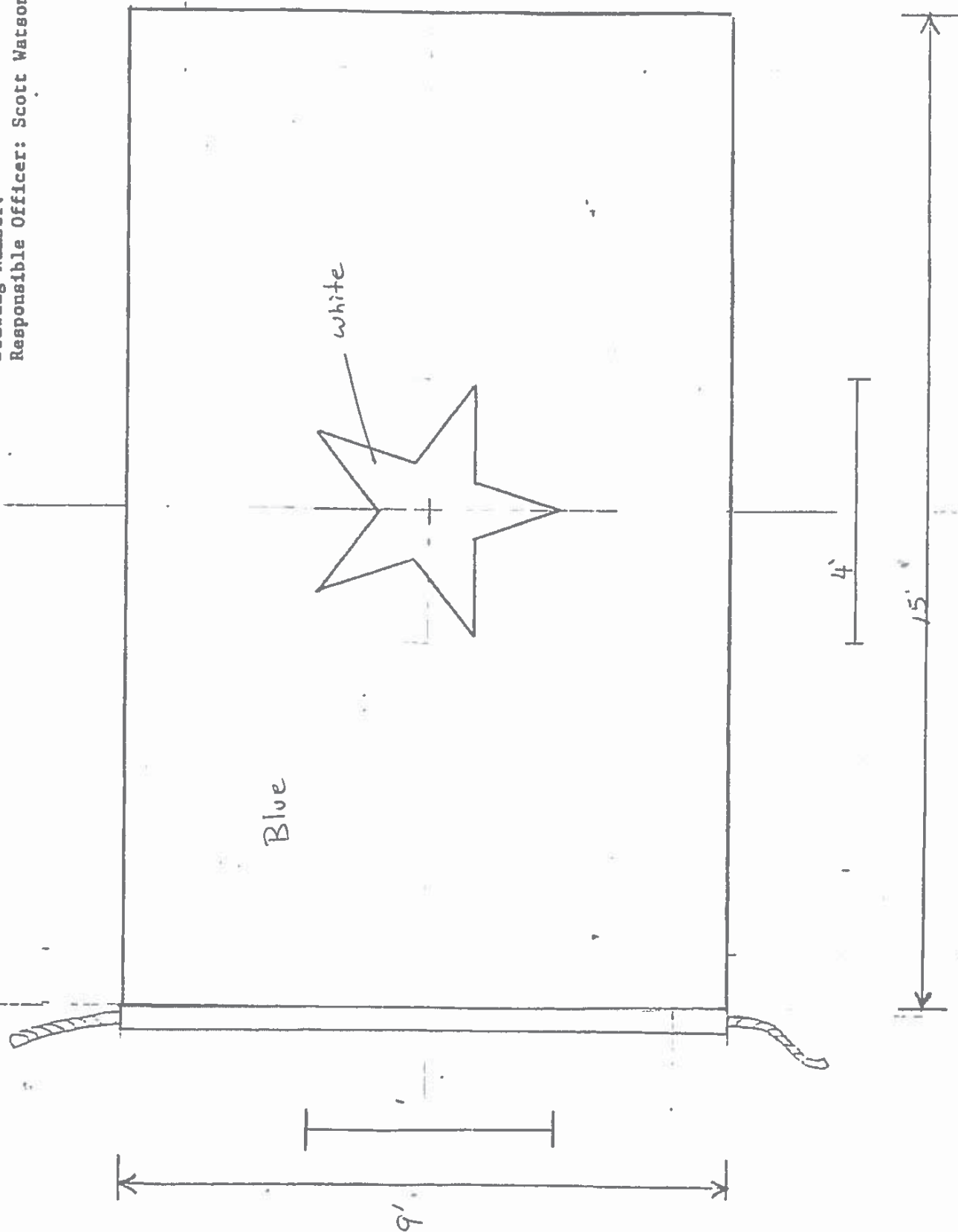
Drawn By: Matt Siemers Scale: 1/4 inch  
Design based on historic chart  
Project Title: Commercial Signal Flags  
Drawing Title: G + A Mitchell  
Drawing Number:  
Responsible Officer: Scott Watson, ISO-HDC



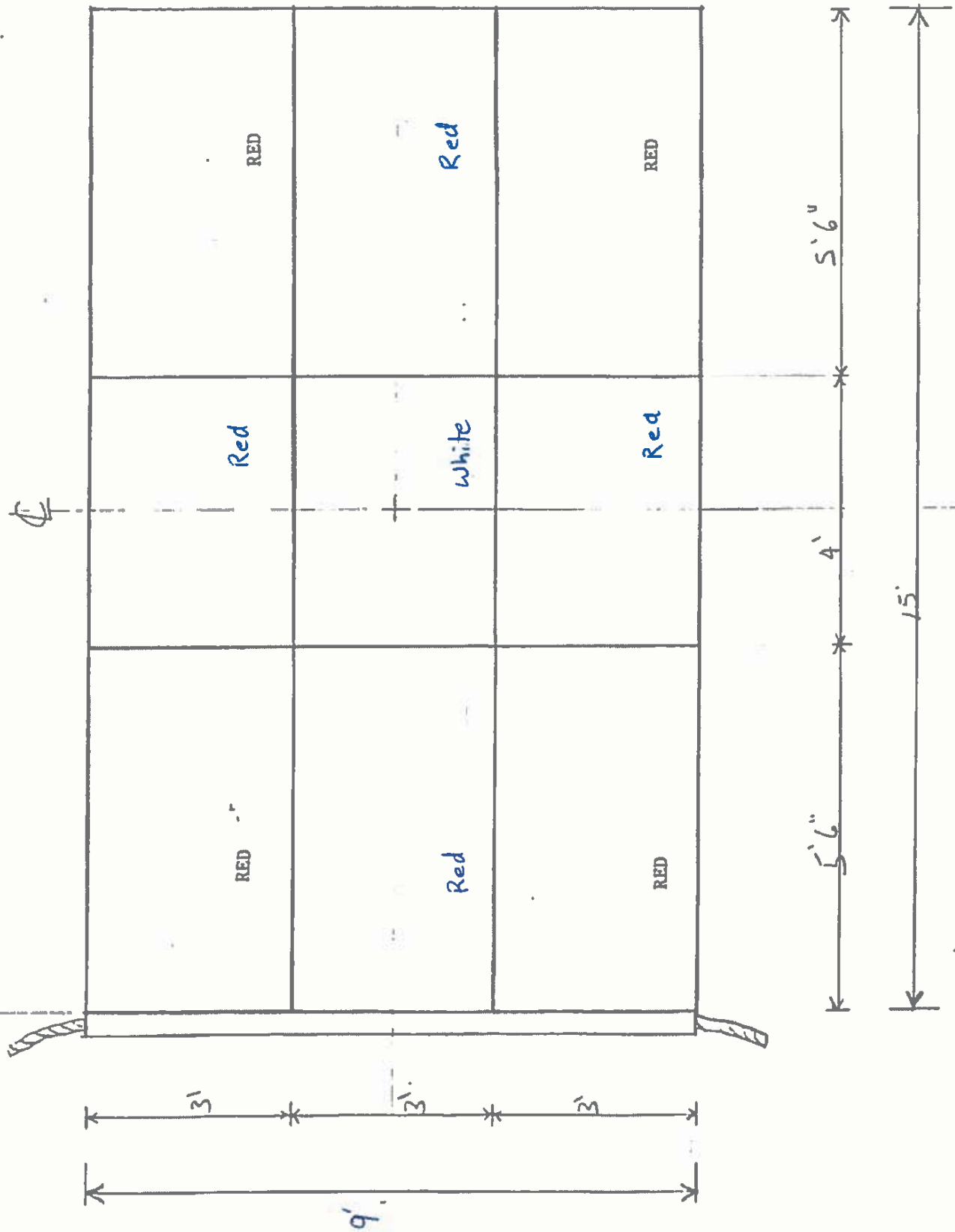
Drawn By: Matt Siemers      Scale: 1/2 inch  
Design Based on Historic Chart  
Project Title: Commercial Signal Flags  
Drawing Title: J. M. Watson + Co  
Drawing Number:  
Responsible Officer: Scott Watson, ISO-HDC



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

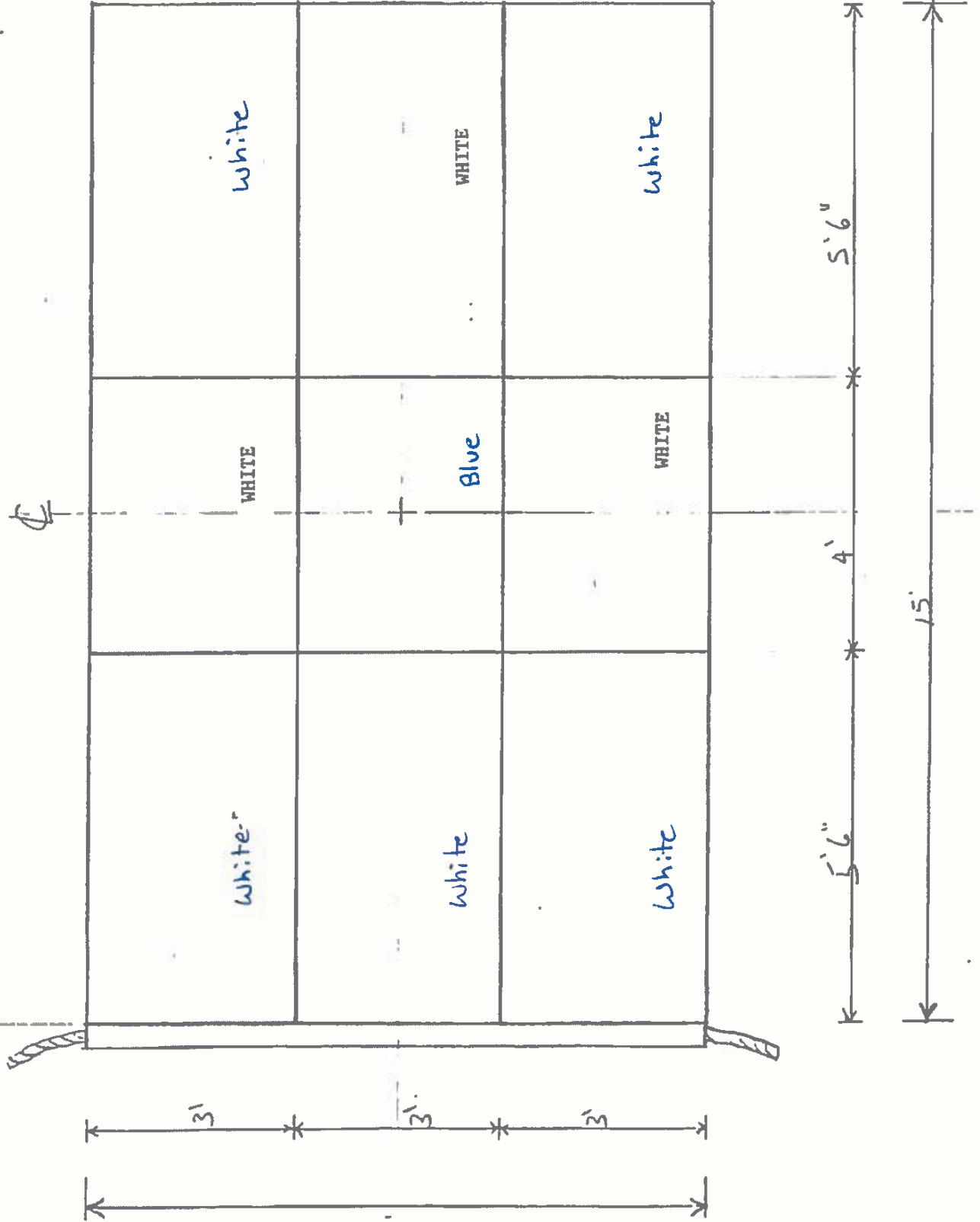


Drawn by: Matt Siemers Scale: 1/4 inch  
Design Based on Historic Chart  
Project Title: Commercial Signal Flags  
Drawing Title: *Deblois and Merkle*  
Drawing Number:  
Responsible Officer: Scott Watson, ISO-HDC



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



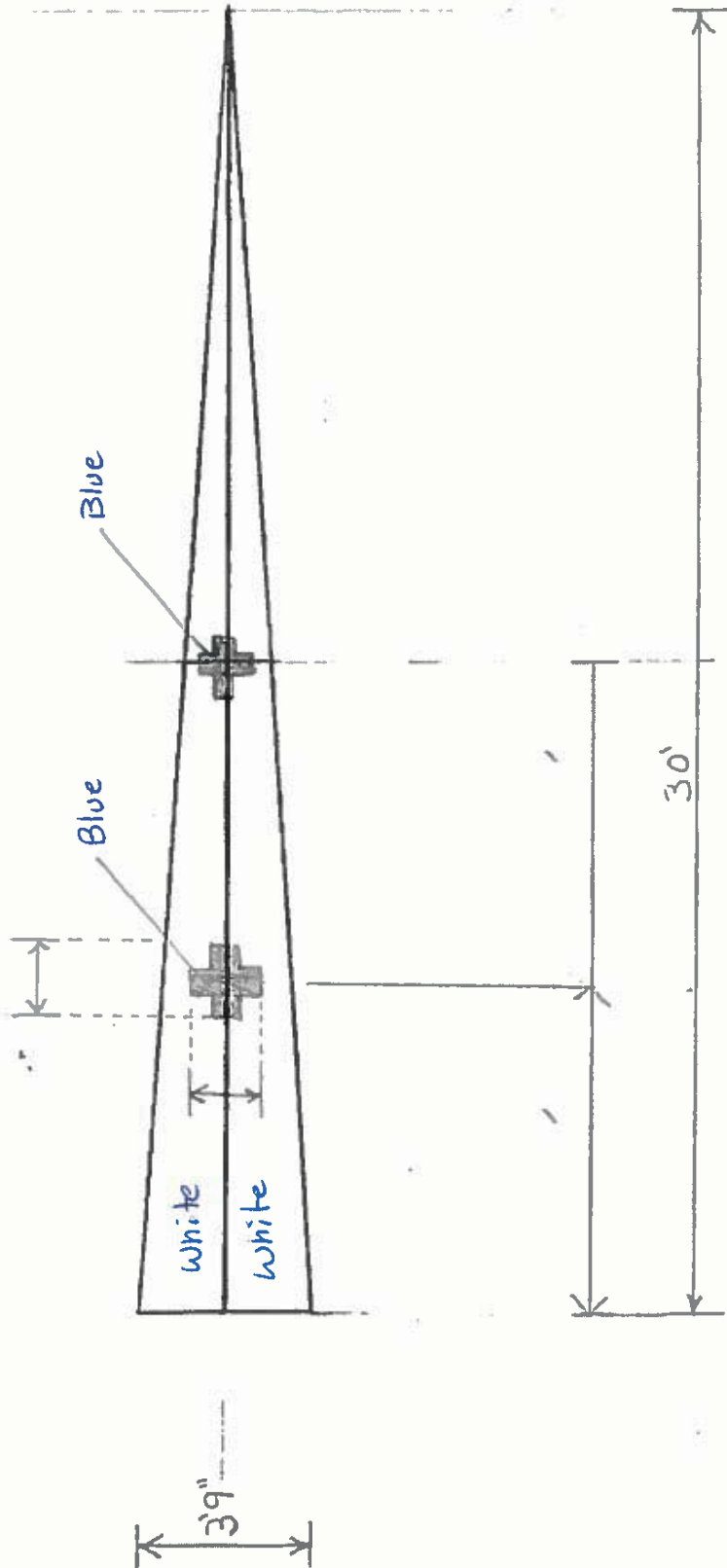
Design Based on Historic Chart

Project Title: Commercial Signal Flags

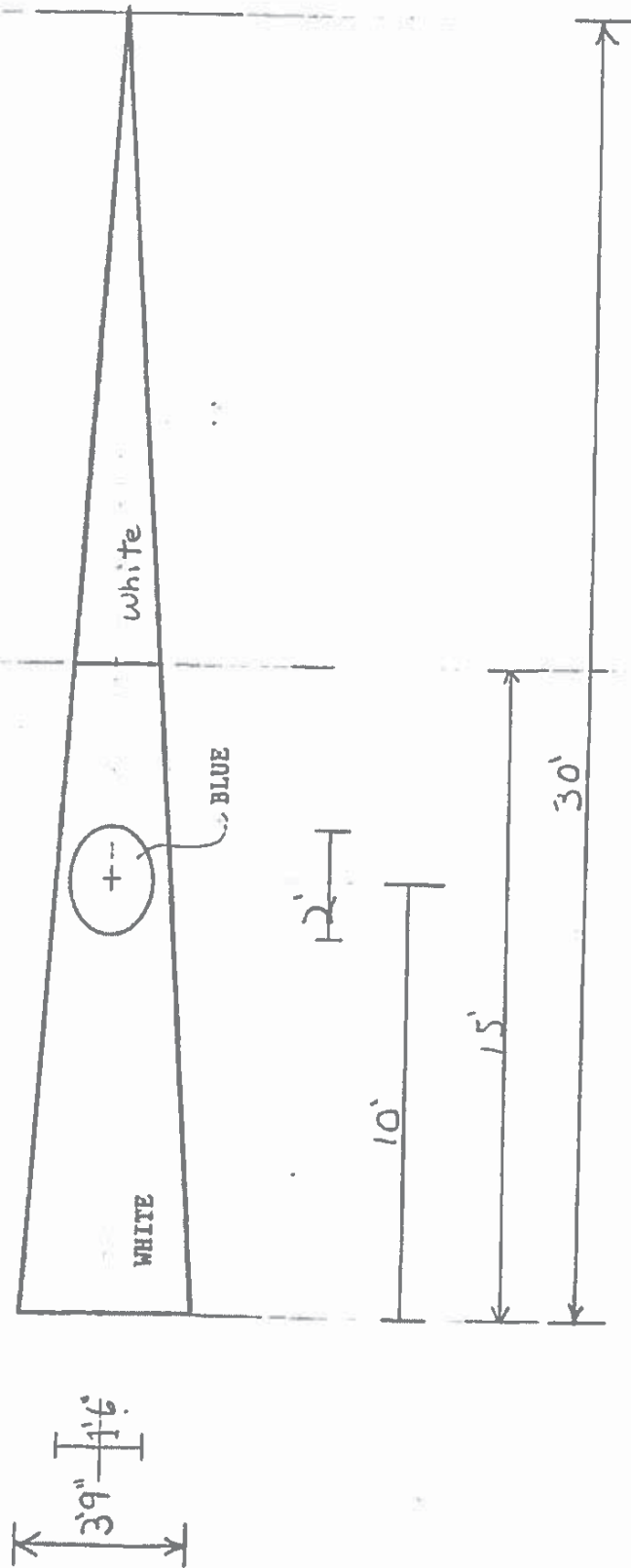
Drawing Title: Transport

Drawing Number:

Responsible Officer: Scott Watson, ISO-HDC



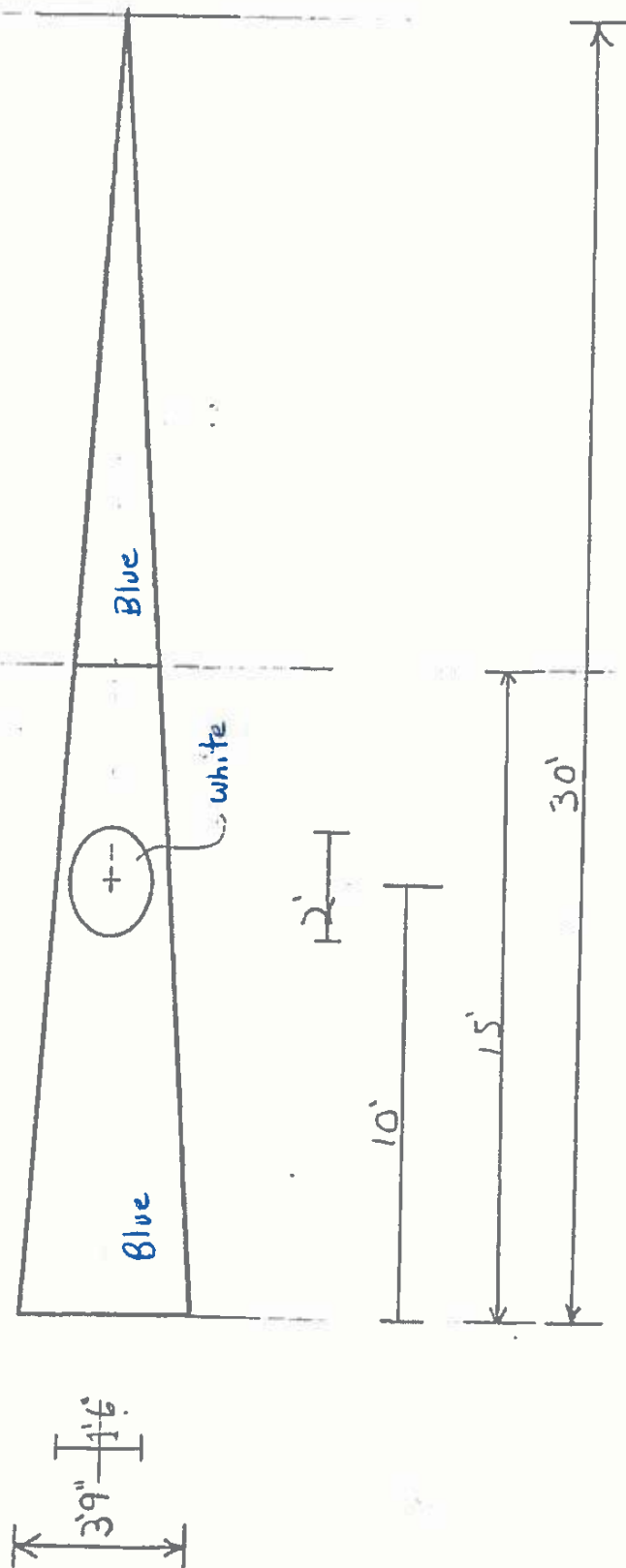
Drawn By: Matt Siemens      Scale: 1/4 inch  
Design Based on Historic Chart  
Project Title: Commercial Signal Flags  
Drawing Title: *Steamer*  
Drawing Number: ..  
Responsible Officer: Scott Watson, ISO-HDC



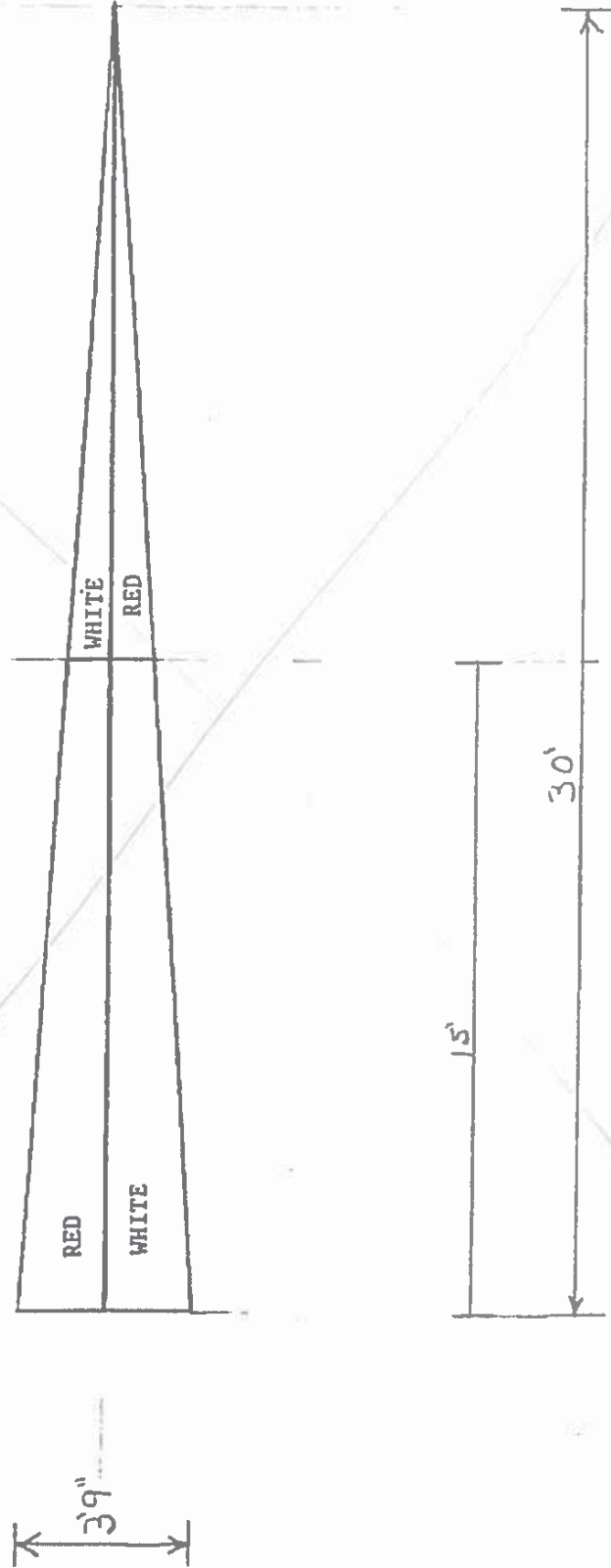
2

2

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

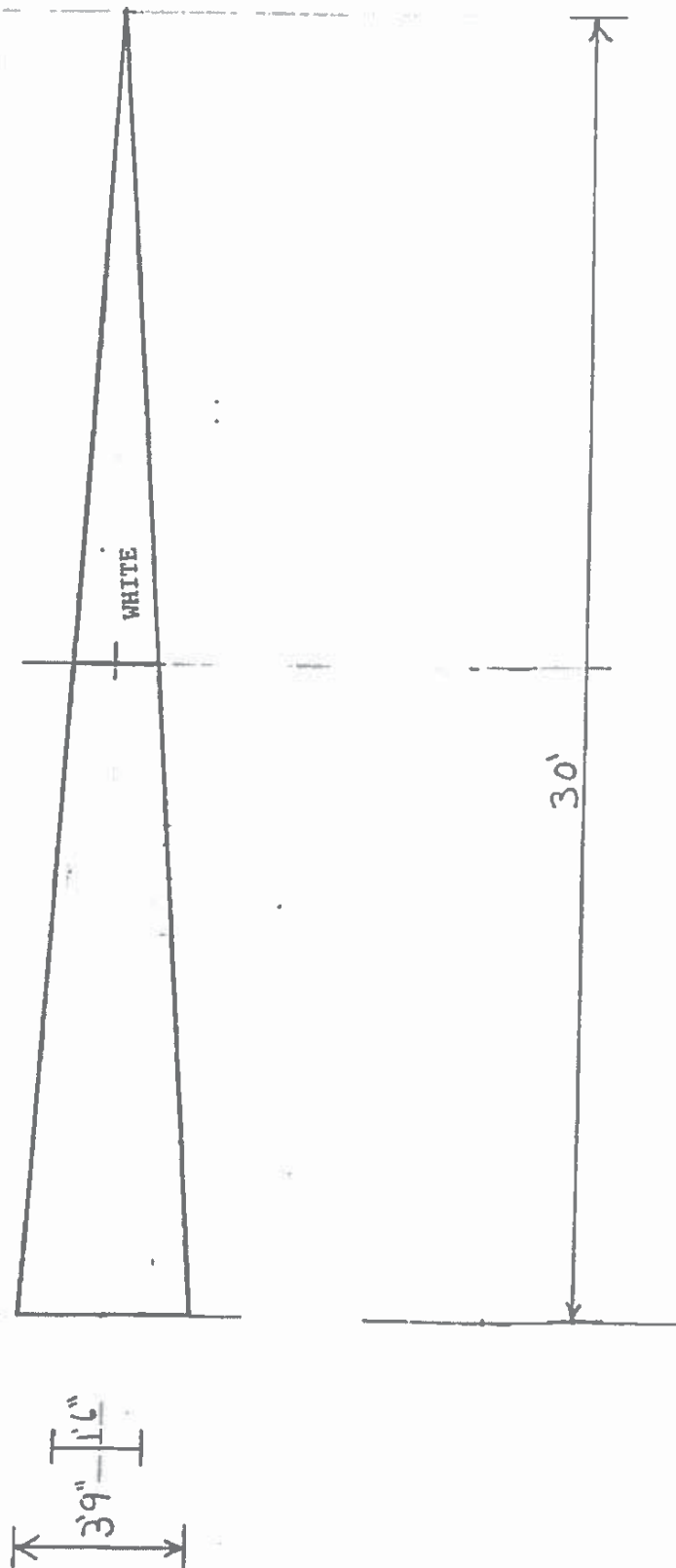


Design Based on Historic Chart  
Project Title: Commercial Signal Flags  
Drawing Title: Interrogative, Demand and Penman  
Drawing Number: P 6  
Responsible Officer: Scott Watson, ISO-HDC

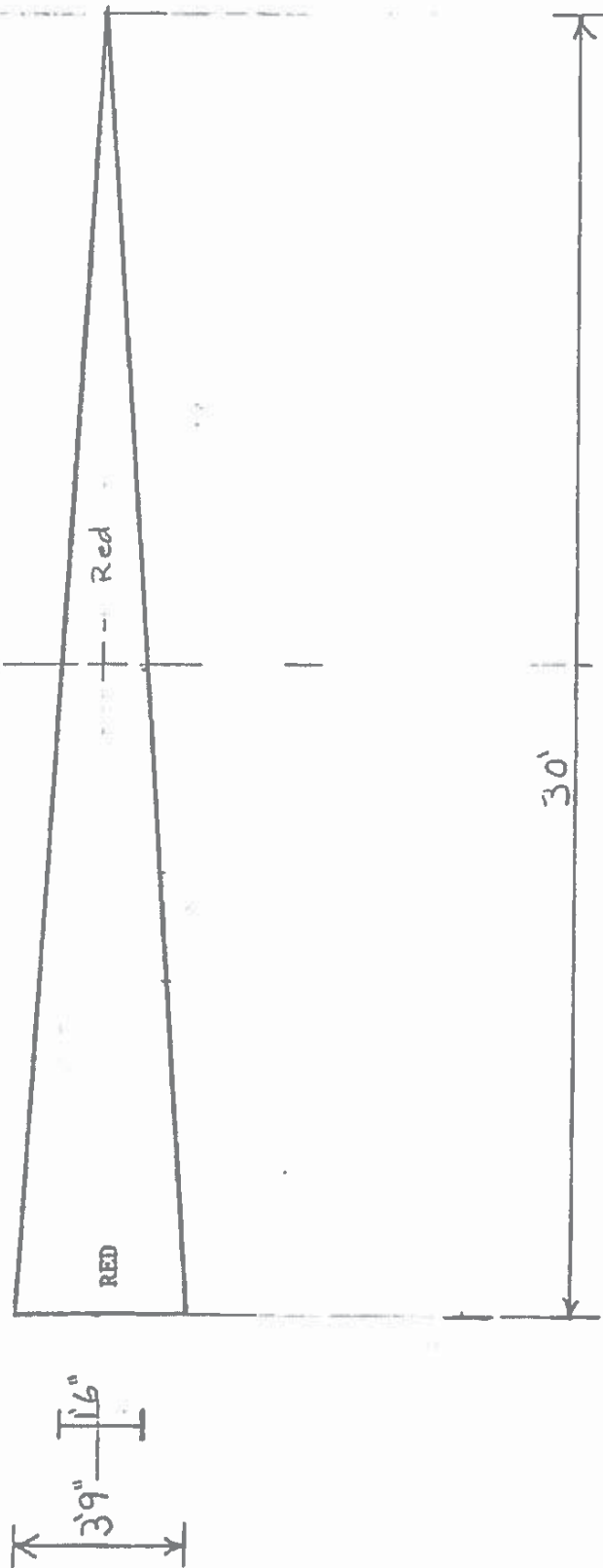


CH

Drawn by: Matt Siemers      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

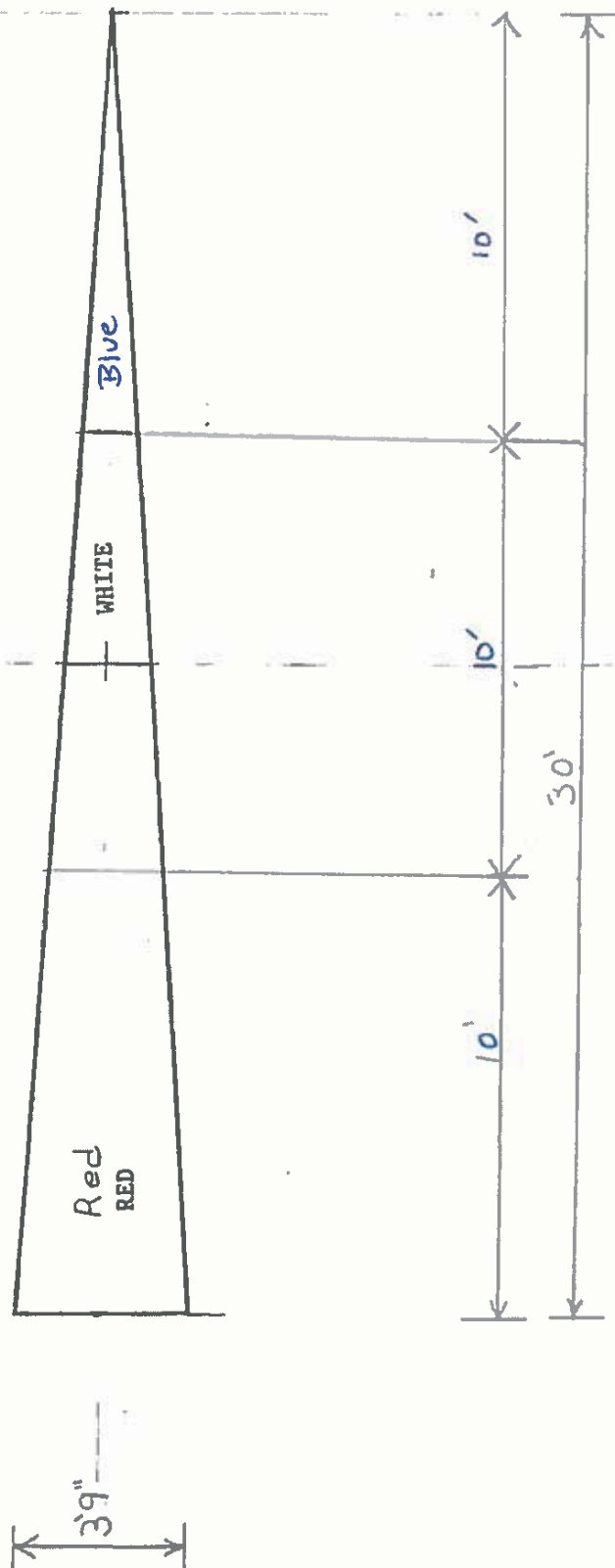
Blue

30'

7

7

Drawn By: Matt Siemers      Scale: 1/2 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 <sup>1</sup>		1,000

<sup>1</sup> 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)**

<b>Maxxam ID</b>		AXL454	AXL454			
<b>Sampling Date</b>		2015/09/02	2015/09/02			
<b>COC Number</b>		B 142148	B 142148			
	<b>UNITS</b>	<b>P1</b>	<b>P1 Lab-Dup</b>	<b>RDL</b>	<b>QC Batch</b>	<b>MDL</b>
<b>Metals</b>						
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: 1-888-492-7227  
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 Trece Ave	B3B 2A7	Dart	NS	Englobe	Elizabeth Rogers	94 Trece 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		
Integrity				Integrity / Checklist by				Guideline Requirements / Detection Limits / Special Instructions				Charge for #				
YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	Jars used but not submitted		
Labelled by	Location / Bin #	Field Sample Identification	Matrix*	Date/Time Sampled	# & type of bottles	Field Filtered & Preserved		Lab Filtration Required		Choose		Choose		Sampled by		
		1 P1	Fibre glass	Sept 2 2015	1 x 250									Total Lead		
		2														
		3														
		4														
		5														
		6														
		7														
		8														
		9 B5H7054														
		10														

RECEIVED BY: (Signature/Print) SEP 2 2015

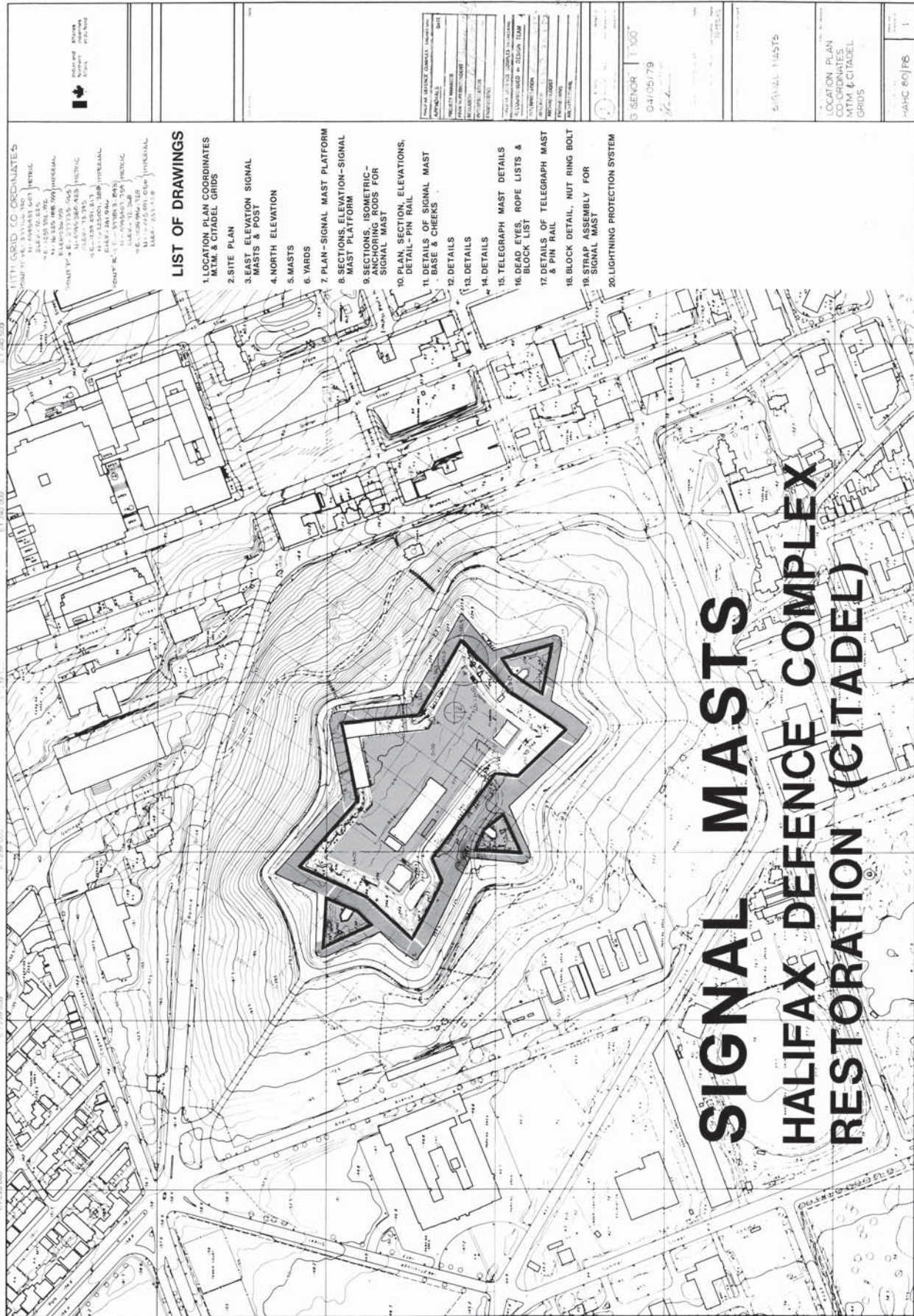
RECEIVED BY: (Signature/Print) SEP 2 2015

White: Maxxam

Yellow: Mail

Pink: Client

ATL FCD 00149 / Revision 10





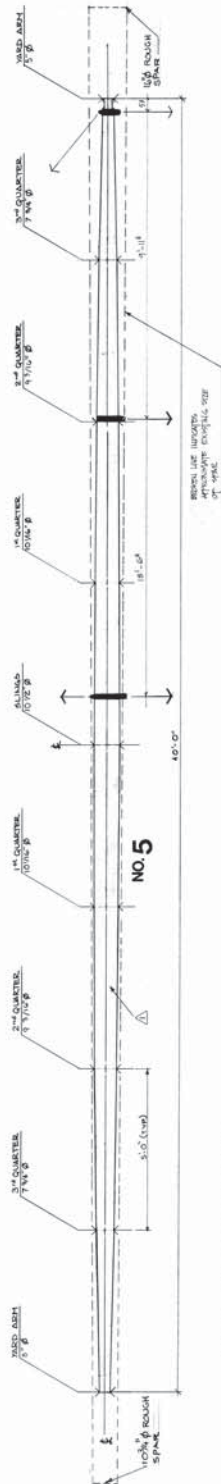
[illegible]



## SIGNAL MASTS

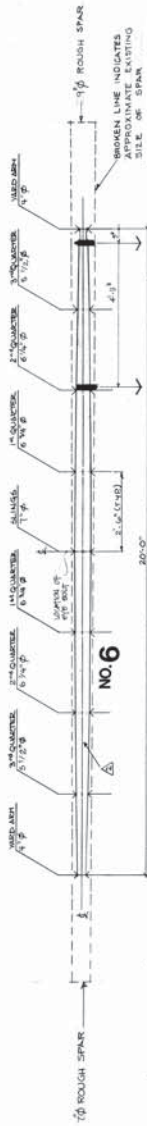
YARDS ↓	BAND LOCATION
100	100
90	90
80	80
70	70
60	60
50	50
40	40
30	30
20	20
10	10
0	0

référence no.	day no.
HA HC 80/P8	6

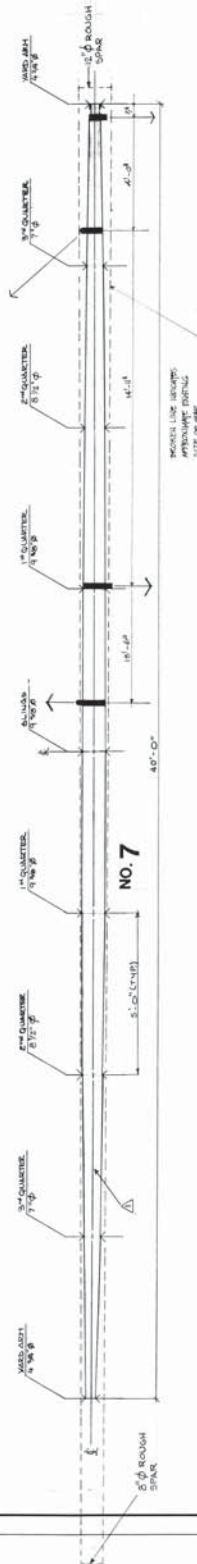


SIGNAL MAST LOWER YARD

① REFER TO DRAWING NO. 5 FOR GENERAL NOTES.  
② ALL SPACES EQUAL.

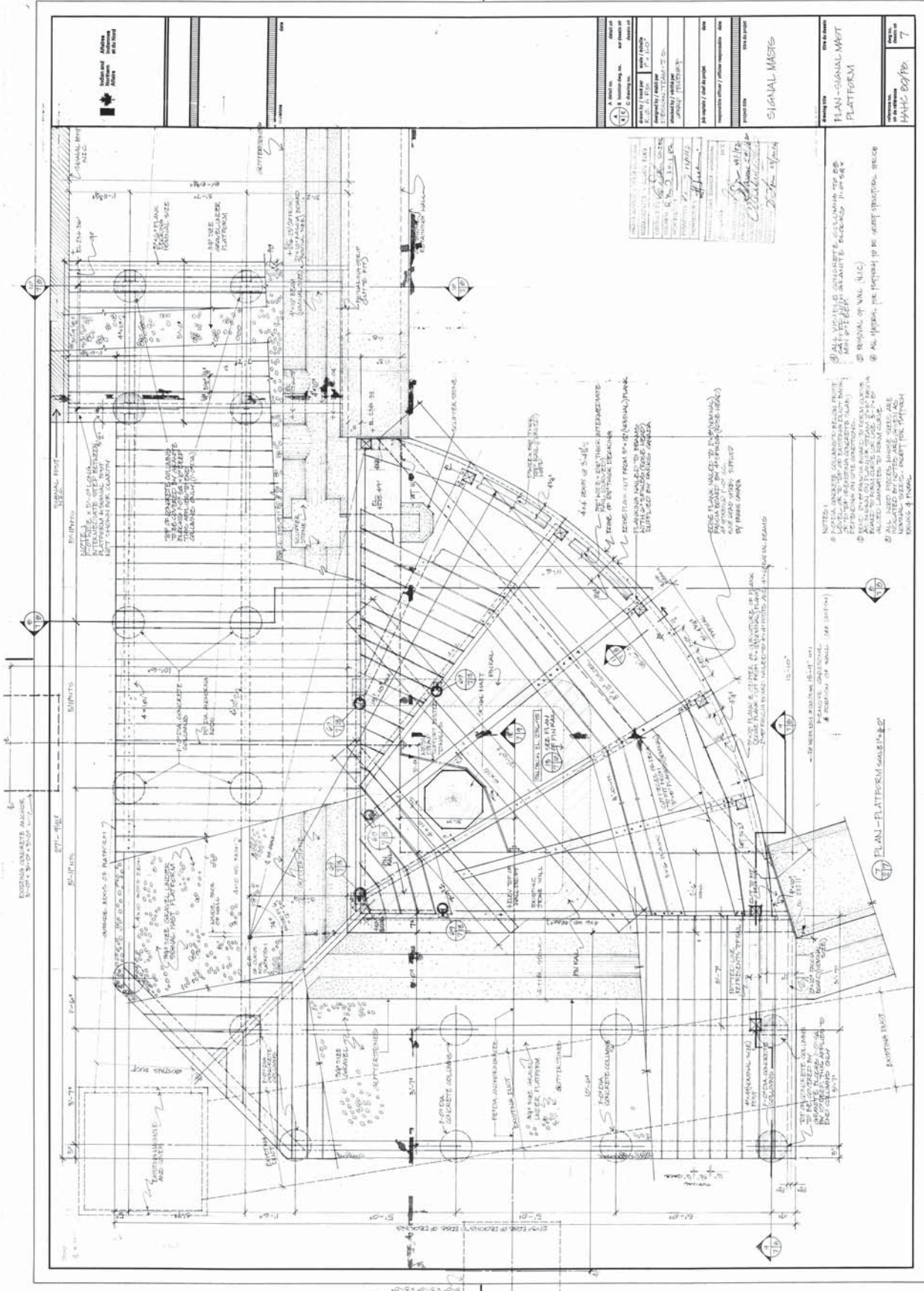


SIGNAL MAST TOP YARD



TELEGRAPH MAST YARD

NOTE: SHARING OF YARDS NOT IN THIS CONTRACT  
SEE NOTES ON SUG. NO. 5

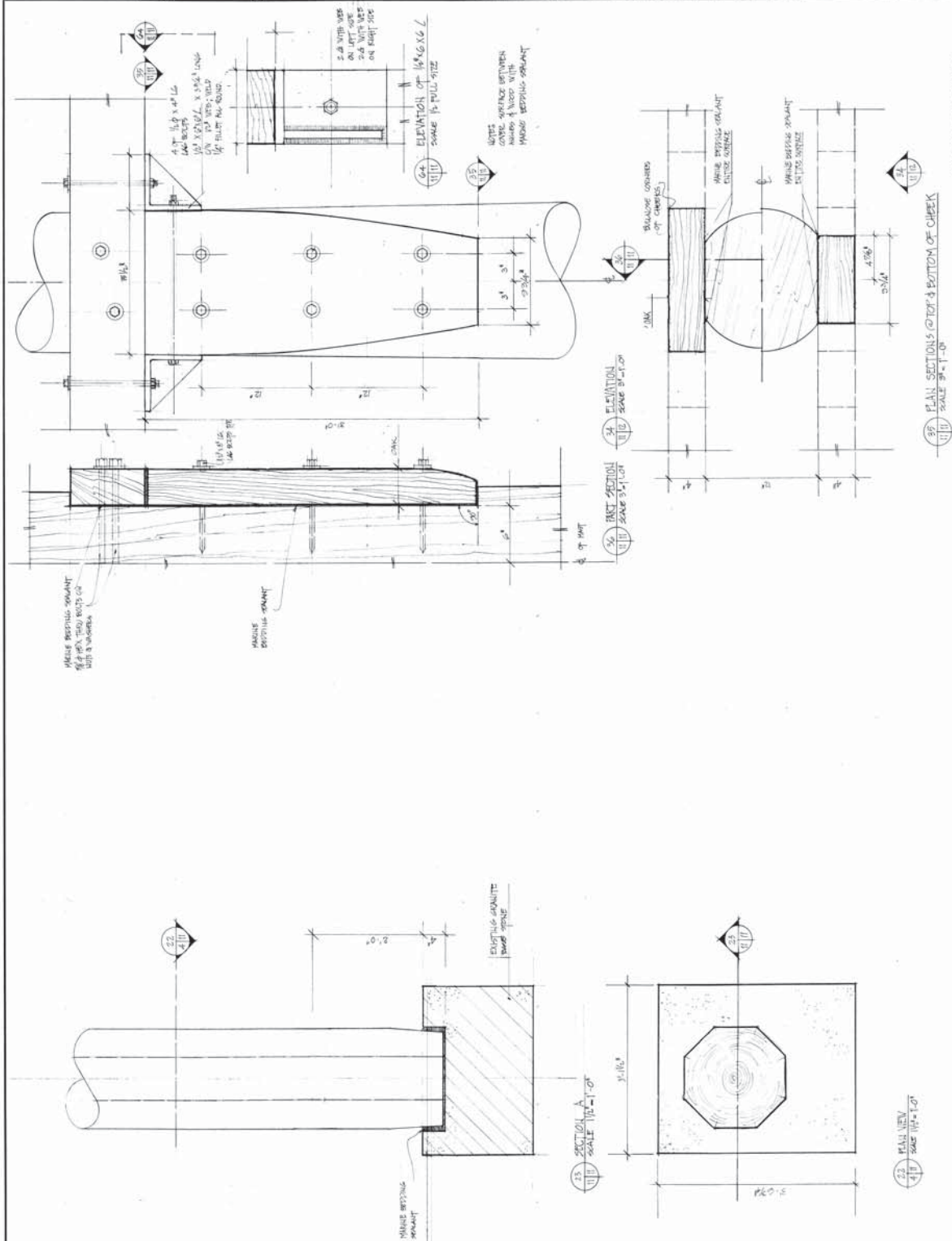


<b>PROJECT DATA</b> PROJECT NO. 100-100-100 PROJECT NAME SIGNAL MASTS PROJECT LOCATION 100-100-100	
<b>DESIGN DATA</b> DESIGNER 100-100-100 CHECKED 100-100-100 DATE 100-100-100	
<b>REVISIONS</b> NO. 1 DESCRIPTION 100-100-100 DATE 100-100-100	
<b>NOTES</b> 1. ALL DIMENSIONS ARE IN FEET AND INCHES. 2. ALL MATERIALS ARE TO BE AS SHOWN ON THE DRAWING. 3. ALL WORK IS TO BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS.	

NOTES:  
 1. ALL DIMENSIONS ARE IN FEET AND INCHES.  
 2. ALL MATERIALS ARE TO BE AS SHOWN ON THE DRAWING.  
 3. ALL WORK IS TO BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS.

PLAN - SIGNAL MASTS PLATFOM





NOTE: ALL DOLLS, PLATES, VASES, ETC. ARE TRAILERS WITH CHILDREN'S NAMES ON THEM

35 PLAN SECTIONS AT TOP & BOTTOM OF CHECK  
SCALE 3" = 1' - 0"

22 PLAN VIEW

23 SECTION A  
SCALE 1/2" = 1'-0"

EXISTING GRANITE

STRUCTURAL ANALYSIS

THE UNIVERSITY OF CHICAGO

35712964  
JAN 20 1994

64 - ELEVATION OF  $\frac{1}{4} \times 6 \times 6 \text{ L}$   
SCALE  $\frac{1}{2} \text{ FULL SIZE}$

2015 11/18/15 NO  
2015 11/18/15 NO  
2015 11/18/15 NO  
2015 11/18/15 NO

[illegible]

34 ELEVATION  
112 SCALE 3"=1.0'

34 ELEVATION  
112 SCALE 3"=1.0'

Blank  
Bullseye  
of circles

FILE BEYOND DEADLINE  
USE CORRECTION

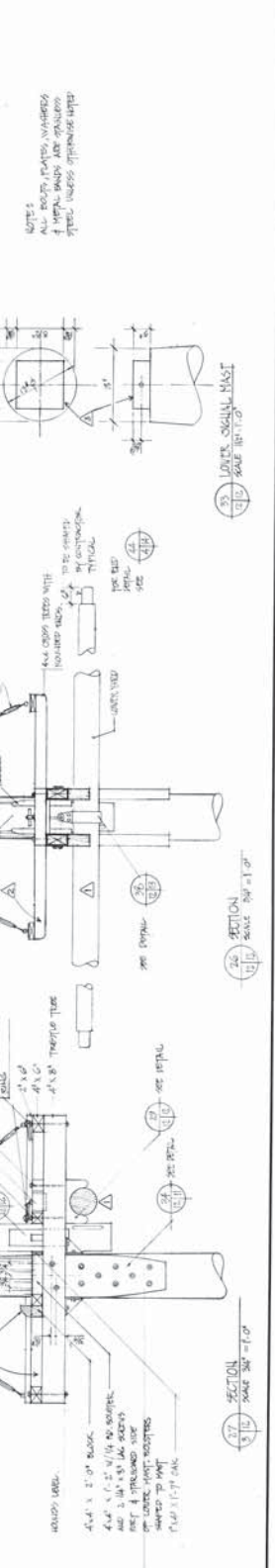
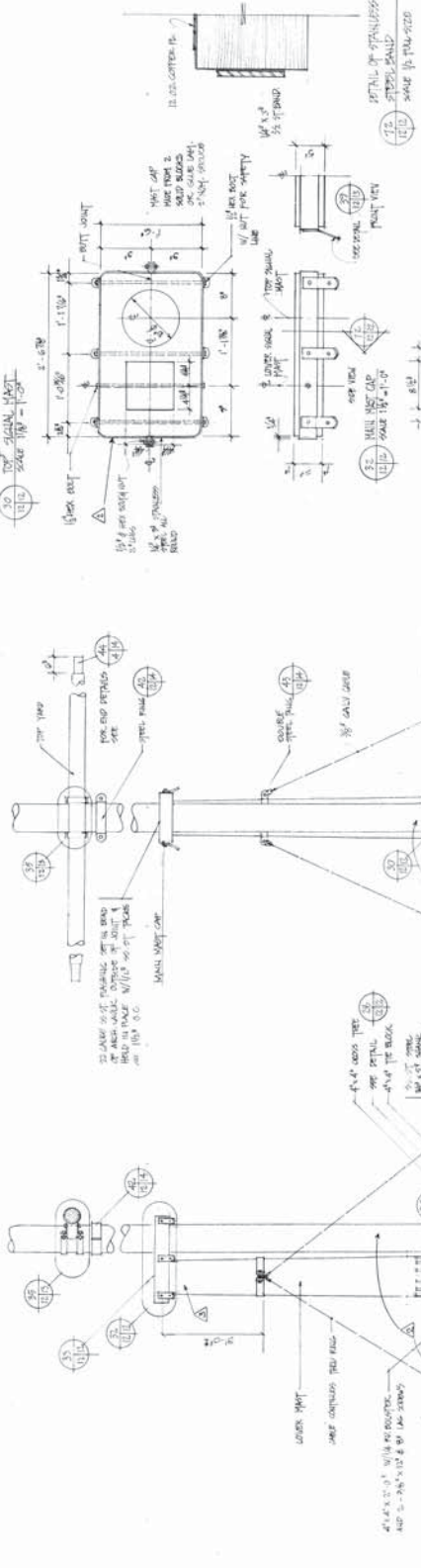
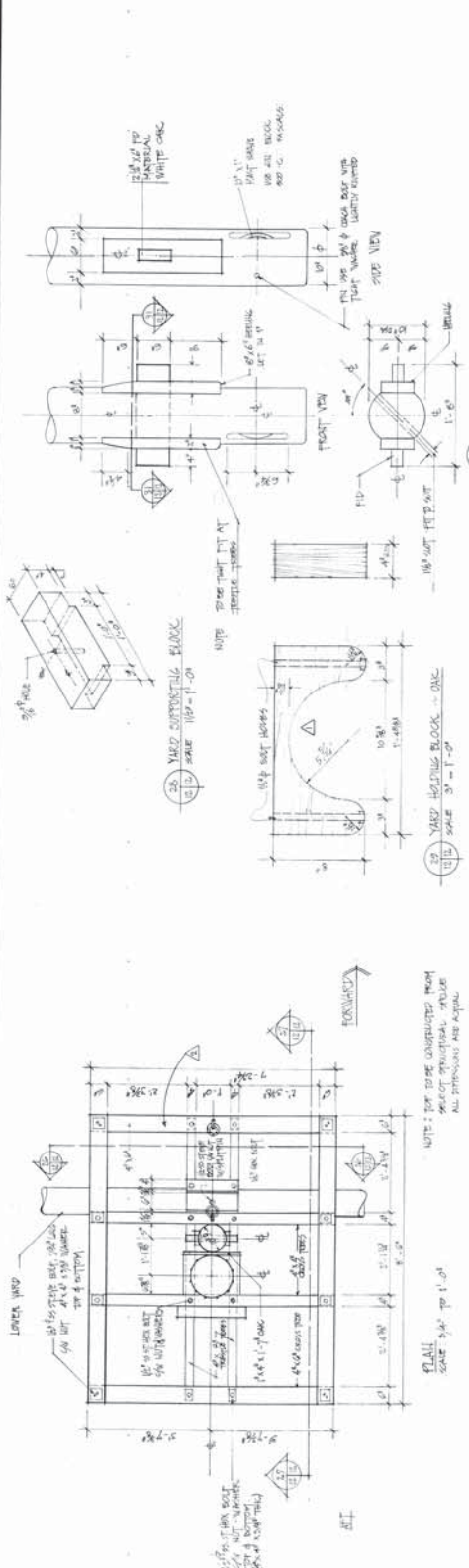
THESE ARE THE  
THESE ARE THE

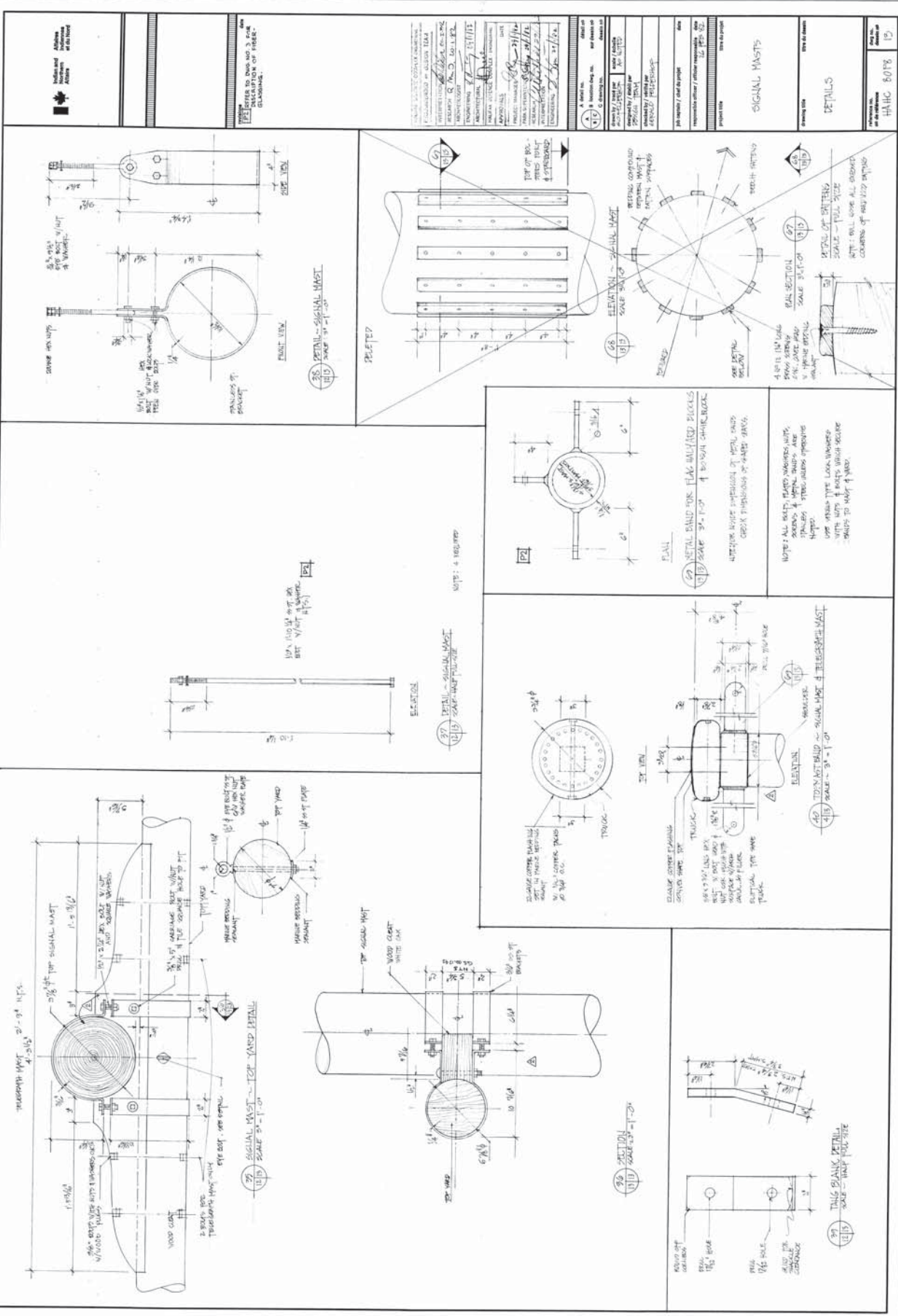
SIGNAL MAST

Writing style	Wrote the document
DETAILS OF SIGNAL MAST BASE & CHEEKS	

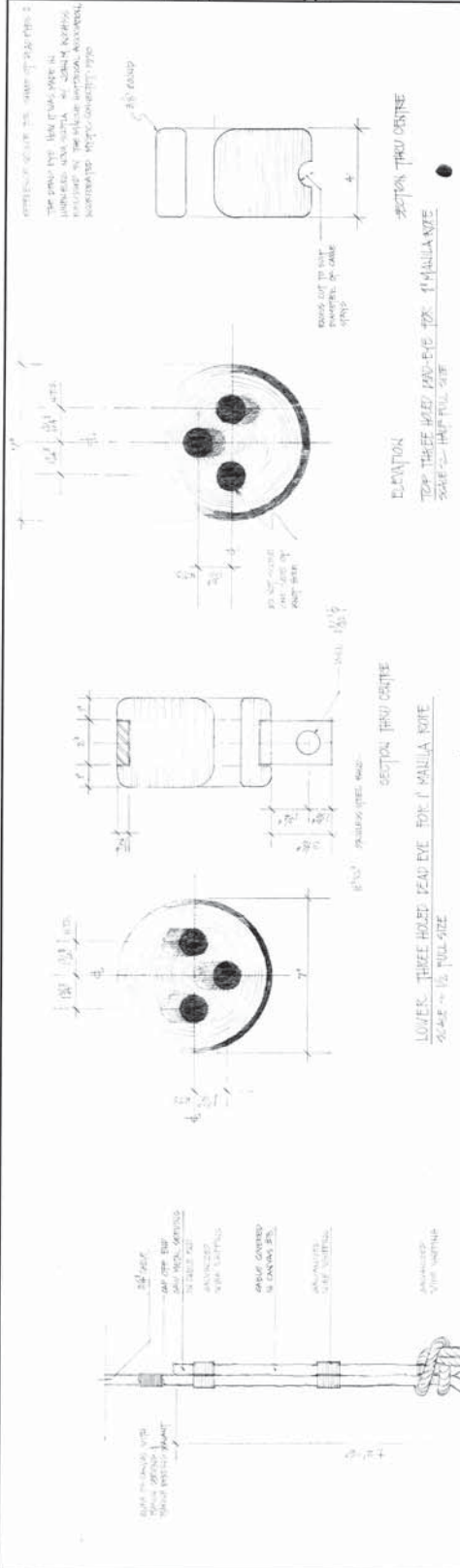
différence not. à la référence	20/03 JAH	long. not. desin en "
-----------------------------------	--------------	-----------------------------

8113 000-000000 0000 0000 0000





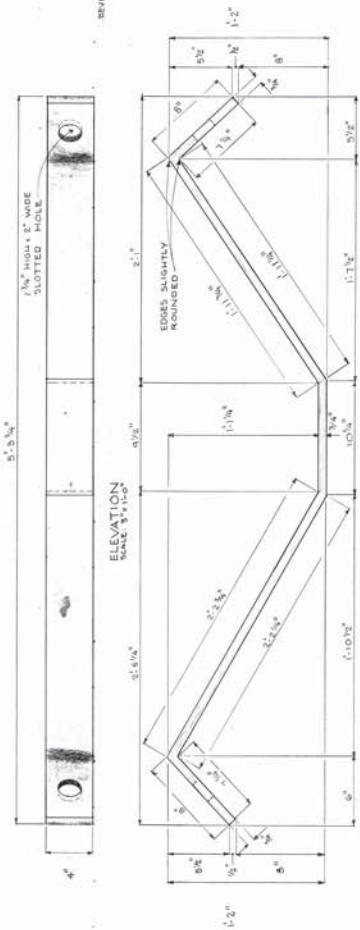
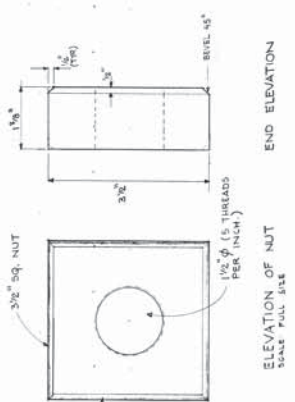




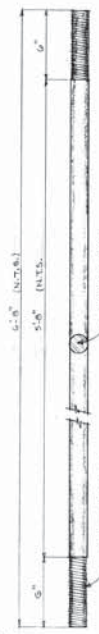
PEAD-EYE LIST		SECTION THRU CENTRE		SECTION THRU HEAD EYE	
ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION
1	ROPE LIST	1	ROPE LIST	1	ROPE LIST
2	ROPE LIST	2	ROPE LIST	2	ROPE LIST
3	ROPE LIST	3	ROPE LIST	3	ROPE LIST
4	ROPE LIST	4	ROPE LIST	4	ROPE LIST
5	ROPE LIST	5	ROPE LIST	5	ROPE LIST
6	ROPE LIST	6	ROPE LIST	6	ROPE LIST
7	ROPE LIST	7	ROPE LIST	7	ROPE LIST
8	ROPE LIST	8	ROPE LIST	8	ROPE LIST
9	ROPE LIST	9	ROPE LIST	9	ROPE LIST
10	ROPE LIST	10	ROPE LIST	10	ROPE LIST
11	ROPE LIST	11	ROPE LIST	11	ROPE LIST
12	ROPE LIST	12	ROPE LIST	12	ROPE LIST
13	ROPE LIST	13	ROPE LIST	13	ROPE LIST
14	ROPE LIST	14	ROPE LIST	14	ROPE LIST
15	ROPE LIST	15	ROPE LIST	15	ROPE LIST
16	ROPE LIST	16	ROPE LIST	16	ROPE LIST
17	ROPE LIST	17	ROPE LIST	17	ROPE LIST
18	ROPE LIST	18	ROPE LIST	18	ROPE LIST
19	ROPE LIST	19	ROPE LIST	19	ROPE LIST
20	ROPE LIST	20	ROPE LIST	20	ROPE LIST
21	ROPE LIST	21	ROPE LIST	21	ROPE LIST
22	ROPE LIST	22	ROPE LIST	22	ROPE LIST
23	ROPE LIST	23	ROPE LIST	23	ROPE LIST
24	ROPE LIST	24	ROPE LIST	24	ROPE LIST
25	ROPE LIST	25	ROPE LIST	25	ROPE LIST
26	ROPE LIST	26	ROPE LIST	26	ROPE LIST
27	ROPE LIST	27	ROPE LIST	27	ROPE LIST
28	ROPE LIST	28	ROPE LIST	28	ROPE LIST
29	ROPE LIST	29	ROPE LIST	29	ROPE LIST
30	ROPE LIST	30	ROPE LIST	30	ROPE LIST
31	ROPE LIST	31	ROPE LIST	31	ROPE LIST
32	ROPE LIST	32	ROPE LIST	32	ROPE LIST
33	ROPE LIST	33	ROPE LIST	33	ROPE LIST
34	ROPE LIST	34	ROPE LIST	34	ROPE LIST
35	ROPE LIST	35	ROPE LIST	35	ROPE LIST
36	ROPE LIST	36	ROPE LIST	36	ROPE LIST
37	ROPE LIST	37	ROPE LIST	37	ROPE LIST
38	ROPE LIST	38	ROPE LIST	38	ROPE LIST
39	ROPE LIST	39	ROPE LIST	39	ROPE LIST
40	ROPE LIST	40	ROPE LIST	40	ROPE LIST
41	ROPE LIST	41	ROPE LIST	41	ROPE LIST
42	ROPE LIST	42	ROPE LIST	42	ROPE LIST
43	ROPE LIST	43	ROPE LIST	43	ROPE LIST
44	ROPE LIST	44	ROPE LIST	44	ROPE LIST
45	ROPE LIST	45	ROPE LIST	45	ROPE LIST
46	ROPE LIST	46	ROPE LIST	46	ROPE LIST
47	ROPE LIST	47	ROPE LIST	47	ROPE LIST
48	ROPE LIST	48	ROPE LIST	48	ROPE LIST
49	ROPE LIST	49	ROPE LIST	49	ROPE LIST
50	ROPE LIST	50	ROPE LIST	50	ROPE LIST
51	ROPE LIST	51	ROPE LIST	51	ROPE LIST
52	ROPE LIST	52	ROPE LIST	52	ROPE LIST
53	ROPE LIST	53	ROPE LIST	53	ROPE LIST
54	ROPE LIST	54	ROPE LIST	54	ROPE LIST
55	ROPE LIST	55	ROPE LIST	55	ROPE LIST
56	ROPE LIST	56	ROPE LIST	56	ROPE LIST
57	ROPE LIST	57	ROPE LIST	57	ROPE LIST
58	ROPE LIST	58	ROPE LIST	58	ROPE LIST
59	ROPE LIST	59	ROPE LIST	59	ROPE LIST
60	ROPE LIST	60	ROPE LIST	60	ROPE LIST
61	ROPE LIST	61	ROPE LIST	61	ROPE LIST
62	ROPE LIST	62	ROPE LIST	62	ROPE LIST
63	ROPE LIST	63	ROPE LIST	63	ROPE LIST
64	ROPE LIST	64	ROPE LIST	64	ROPE LIST
65	ROPE LIST	65	ROPE LIST	65	ROPE LIST
66	ROPE LIST	66	ROPE LIST	66	ROPE LIST
67	ROPE LIST	67	ROPE LIST	67	ROPE LIST
68	ROPE LIST	68	ROPE LIST	68	ROPE LIST
69	ROPE LIST	69	ROPE LIST	69	ROPE LIST
70	ROPE LIST	70	ROPE LIST	70	ROPE LIST
71	ROPE LIST	71	ROPE LIST	71	ROPE LIST
72	ROPE LIST	72	ROPE LIST	72	ROPE LIST
73	ROPE LIST	73	ROPE LIST	73	ROPE LIST
74	ROPE LIST	74	ROPE LIST	74	ROPE LIST
75	ROPE LIST	75	ROPE LIST	75	ROPE LIST
76	ROPE LIST	76	ROPE LIST	76	ROPE LIST
77	ROPE LIST	77	ROPE LIST	77	ROPE LIST
78	ROPE LIST	78	ROPE LIST	78	ROPE LIST
79	ROPE LIST	79	ROPE LIST	79	ROPE LIST
80	ROPE LIST	80	ROPE LIST	80	ROPE LIST
81	ROPE LIST	81	ROPE LIST	81	ROPE LIST
82	ROPE LIST	82	ROPE LIST	82	ROPE LIST
83	ROPE LIST	83	ROPE LIST	83	ROPE LIST
84	ROPE LIST	84	ROPE LIST	84	ROPE LIST
85	ROPE LIST	85	ROPE LIST	85	ROPE LIST
86	ROPE LIST	86	ROPE LIST	86	ROPE LIST
87	ROPE LIST	87	ROPE LIST	87	ROPE LIST
88	ROPE LIST	88	ROPE LIST	88	ROPE LIST
89	ROPE LIST	89	ROPE LIST	89	ROPE LIST
90	ROPE LIST	90	ROPE LIST	90	ROPE LIST
91	ROPE LIST	91	ROPE LIST	91	ROPE LIST
92	ROPE LIST	92	ROPE LIST	92	ROPE LIST
93	ROPE LIST	93	ROPE LIST	93	ROPE LIST
94	ROPE LIST	94	ROPE LIST	94	ROPE LIST
95	ROPE LIST	95	ROPE LIST	95	ROPE LIST
96	ROPE LIST	96	ROPE LIST	96	ROPE LIST
97	ROPE LIST	97	ROPE LIST	97	ROPE LIST
98	ROPE LIST	98	ROPE LIST	98	ROPE LIST
99	ROPE LIST	99	ROPE LIST	99	ROPE LIST
100	ROPE LIST	100	ROPE LIST	100	ROPE LIST

DATE: 09/01/2012  
 BY: [Signature]  
 FOR: [Signature]  
 APPROVED: [Signature]  
 CHECKED: [Signature]  
 DRAWN: [Signature]  
 SCALE: 1/4" = 1"

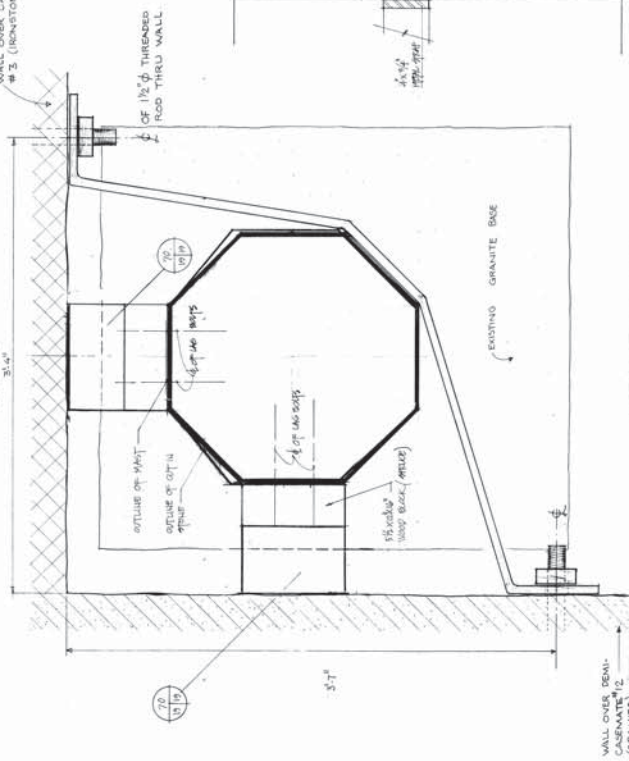
TITLE <b>SIGNAL MAST</b>		DRAWING NO. <b>STRAP ASSEMBLY FOR SIGNAL MAST</b>	
PROJECT NO. <b>1047</b>		SHEET NO. <b>10</b>	
DATE <b>10/1/61</b>		DESIGNED BY <b>AS</b>	
CHECKED BY <b>AS</b>		APPROVED BY <b>AS</b>	
PROJECT OFFICE / OFFICE OF THE DISTRICT ENGINEER <b>AS</b>		PROJECT OFFICE / OFFICE OF THE DISTRICT ENGINEER <b>AS</b>	
PROJECT OFFICE / OFFICE OF THE DISTRICT ENGINEER <b>AS</b>		PROJECT OFFICE / OFFICE OF THE DISTRICT ENGINEER <b>AS</b>	



NOTE: CHECK DIMENSIONS AGAINST ACTUAL SITE CONDITIONS AFTER MAST IS IN PLACE



PLAN AND SECTION OF 1/2" Ø THREADED ROD  
 SCALE 3/4" = 1'-0"



STRAP ASSEMBLY FOR SIGNAL MAST - PLAN  
 COPIED FROM DETAILS IN EXISTING WALL OVER BENT CASMATE #12

BLOCK WEIGES BETWEEN MAST & RETAINING WALLS - ELEVATION  
 SCALE 3/4" = 1'-0"

LOCATION OF HARDWARE  
 SIGNAL MAST 3 E. 341017

ALL PIPES IN ROCK ARE TO BE SET IN CONCRETE.

APPROVED BY <b>AS</b>	PROJECT OFFICE / OFFICE OF THE DISTRICT ENGINEER <b>AS</b>
PROJECT OFFICE / OFFICE OF THE DISTRICT ENGINEER <b>AS</b>	PROJECT OFFICE / OFFICE OF THE DISTRICT ENGINEER <b>AS</b>
PROJECT OFFICE / OFFICE OF THE DISTRICT ENGINEER <b>AS</b>	PROJECT OFFICE / OFFICE OF THE DISTRICT ENGINEER <b>AS</b>

