RHODE ISLAND PUBLIC TRANSIT AUTHORITY

705 Elmwood Avenue
Providence, RI 02907

GENERAL GUIDELINES FOR COMPLETING REQUEST FOR PROPOSAL PACKAGE

This document is intended as a guideline to assist prospective Proposers in successfully completing the necessary Proposal paperwork. You are strongly encouraged to read the Instructions for Proposers Sections very carefully. This document is NOT intended to replace the more-detailed instructions that are included in the attached Proposal Package.

- It is **EXTREMELY IMPORTANT** that all required forms be filled out completely. Federal and State Regulations mandate that these forms be filled out properly. Failure to fill out these forms may result in your Proposal being ruled non-responsive. Non Responsive Proposals **will not** be awarded the contract.
- **REMEMBER to completely fill out** all REQUIRED FORMS (see REQUIRED FORMS Checklist). The **forms that are checked off are the only ones that apply to this Proposal.**
- If a form does not apply to your business or Proposal please mark the form Not Applicable or some other similar wording at your discretion.
- DBE (Disadvantaged Business Enterprise) Obligation. RIPTA agrees to ensure that DBES as outlined in 49 CFR Part 26, as amended, have the maximum opportunity to participate in the performance of contracts. Therefore it is imperative that you read the DBE Section and complete the necessary Paperwork. All DBEs submitted must be certified by the State of Rhode Island at the time of proposal submittal.
- Make Sure the Proposal Response is received by the RIPTA Purchasing Department by the designated date and time. Late Proposals will not be accepted
- It shall be the responsibility of prospective proposers to check the State of Rhode Island, Department of Administration Division of Purchases Website for any addenda.
- Make Sure that the Proposal is returned in an Envelope or Box **CLEARLY LABELED** with the following Information: **Proposal Number and what the Proposal is for. This information should be in the lower left hand corner**. The envelope should also be labeled **Proposal DOCUMENTS ENCLOSED**
- When in doubt, contact RIPTA Contracts Manager (401) 784-9500 extension 214 for assistance.
- **Proposal must be submitted pre-punched for standard three ring binders. Spiral bound proposal submittals will not be allowed. Please note that United Parcel Service will not deliver to our address.**

Please refer to Page 76 for Scope of Work

The following label shall be affixed to the envelope or package containing the proposal response documents. It is imperative that his label be affixed to insure the proposal documents are received and routed in the proper manner:

Return Address

_____

_____

_____

PROPOSAL DOCUMENTS ENCLOSED

CONTRACTS MANAGER
Rhode Island Public Transit Authority
Purchasing Department
Room 217
705 Elmwood Avenue
Providence, RI 02907

PROPOSAL NUMBER: **13-31**

PROPOSAL FOR: **Fare Media**

DUE: **May 15,2013**

RHODE ISLAND PUBLIC TRANSIT AUTHORITY

705 Elmwood Avenue
Providence, RI 02907

REQUIRED COMPANY INFORMATION FORM

The following information is mandatory; Failure to complete this section may jeopardize your eligibility to be awarded the contract. ALL SECTIONS OF THIS FORM MUST BE FILLED OUT COMPLETELY

THIS INFORMATION IS REQUIRED IN ACCORDANCE WITH 49CFR 26.11

THIS FORM IS REQUIRED FOR ALL BIDDERS, PRIME CONTRACTORS , POTENTIAL SUBCONTRACTORS AND SUBCONTRACTORS

PLEASE PRINT OR TYPE YOUR INFORMATION

COMPANY NAME _____

COMPANY STREET: ADDRESS: _____

_____

COMPANY MAILING: ADDRESS: _____

_____

COMPANY CONTACT PERSON: _____

COMPANY TELEPHONE NUMBER: _____

COMPANY TELEFAX NUMBER: _____

COMPANY CONTACT EMAIL: _____

AGE OF THE FIRM (YEARS): _____

ANNUAL GROSS RECEIPTS (DOLLARS): _____

IS YOUR FIRM CERTIFIED BY THE STATE OF RHODE ISLAND AS A DISADVANTAGED BUSINESS ENTERPRISE ? _____

DUNN AND BRADSTREET NUMBER: _____

NAICS CODE: _____ **INDUSTRY** _____

NAICS Code can be found at the following website:. www.naics.com

COMPANY STATUS: ____PRIME CONTRACTOR _____ SUBCONTRACTOR

RHODE ISLAND PUBLIC TRANSIT AUTHORITY
Request for Proposals Number 13-31

REQUEST FOR PROPOSALS

PROPOSAL NO:	**13-31**
DATE OF INVITATION:	**April 10, 2013**
PRE-PROPOSAL MEETING:	**Not Applicable**
PROPOSAL RECEIPT DATE:	**May 15,2013**
FURNISHING OF:	**Fare Media**
FEDERAL TRANSIT ADMINISTRATION PROJECT NO.	**RIPTA Operating Funds**

The participant shall specify the official name of his/her company in the upper left-hand corner of the Proposal Response Envelope and show **PROPOSAL NO: and Proposal Description in the lower left-hand corner and send or deliver to**:

Purchasing Department
Room 217
705 Elmwood Avenue
Providence, RI 02907

The participant shall execute the offer form enclosed herewith.

Proposals will be reviewed and evaluated; all participants will be notified as soon as approval of award is made.

The proposer shall execute the offer form enclosed herewith. The proposer shall return **Five copy(ies)** with the **original** proposal.

RIPTA RESERVES THE RIGHT TO REJECT PROPOSALS FROM PARTICIPANTS WHO HAVE NOT USED THE FORM AND PROPER PROPOSAL RESPONSE ENVELOPE FORMAT.

RIPTA RESERVES THE RIGHT TO CANCEL ANY PARTICULAR SOLICITATION, AND/OR REJECT ANY OR ALL PROPOSALS.

RHODE ISLAND PUBLIC TRANSIT AUTHORITY
Request for Proposals Number 13-31
TABLE OF CONTENTS

I.	CALENDAR		1
	A.	Date of Invitation:	1
	B.	Pre-Proposal Conference:	1
	C.	Request for Approved equals and Questions	1
	D.	Proposal Receipt:	1
II.	NOTICE TO OFFERORS		2
	A.	DATE: April 10, 2013	2
III.	CONTACT LIST		3
	A.	Specifications/Scope of Work	3
	B.	Contracts Manager	3
	C.	DBE Liaison Officer	3
IV.	INSTRUCTIONS FOR PROPOSERS		4
	A.	Definition of Terms.	4
		1. Procuring agency	4
		2. RIPTA	4
		3. Contractor	4
		4. Request for Proposal (RFP)	4
		5. Authorized Signature.	4
		6. Request for Proposal.	4
		7. Proposal Evaluation Factors/Criteria	4
		8. Basis of Award	4
		9. Notice of Award.	4
		10. Specifications.	4
		11. Tender	4
	B.	Form of Proposal and Signature.	5
		1. Sole Owner.	5
		2. General Partnership.	5
		3. Limited Partnership	5
		4. Corporation.	5
	C.	Proposal.	5
	D.	Unauthorized Conditions.	5
	E.	Submission of Proposal.	5
	F.	Modification or Withdrawal of Proposal.	5
	G.	Proposer Interviews or Presentations	6
	H.	Samples	6
	I.	Canvass of Proposals.	6
	J.	Rejection of Proposals.	6
	K.	Sales Tax Exemption.	6
	L.	Delivery Charges.	7
	M.	Alternative Proposal	7
	N.	Non-Collusive Affidavit.	7
	O.	Interest of RIPTA Personnel.	7
	P.	Penalty for Collusion.	7
	Q.	Proposal Acceptance Period	7
	R.	Postponement.	7
	S.	Amendment and/or Postponement.	7

T. Single Proposal. 8
U. Qualifications for Award. 8
V. Ineligible Proposers. 9
W. Disadvantaged Business Enterprise 9
X. Addenda. 9
Y. Proposer's Requests and Appeals. 9
1. Appointments. 9
2. Amending Materials. 9
3. Appeal. 9
4. Withdrawal. 10
5. Notification. 10
Z. Equal Employment Opportunity. 10
AA. Prohibited Interest. 10
BB. Interest of Members of Congress. 10
CC. Contract Commencement Date. 10
DD. Notice, Waiver and Applicable Law. 10
EE. Protest. 11
1. General. 11
FF. Protests Before Award 11
1. Solicitation Phase. 11
2. Pre-Award Phase. 12
GG. Protests After Award. 12
HH. Source Selection and Contract Award 12
II. Title VI Assurances 13
JJ. Energy Conservation Requirements: 13
KK. Program Fraud 13
LL. No Government Obligation to Third Parties: 13
V. GENERAL PROVISIONS 14
A. Definitions: 14
1. Authority 14
2. Contracting Manager 14
3. Directed, Ordered, designated or prescribed 14
B. Changes: 14
C. Extras: 14
D. Inspection: 15
E. Responsible: 15
F. Title and Risk of Loss 15
G. Payments 16
H. Stop Work Order 16
I. Disputes 16
J. Default 17
K. Termination for Convenience of the Authority 17
L. Federal, State and Local Taxes 18
M. Walsh-Healey Public Contracts Act 18
N. Officials Not to Benefit 19
O. Covenant against Contingent Fees 19

RHODE ISLAND PUBLIC TRANSIT AUTHORITY
Request for Proposals Number 13-31
TABLE OF CONTENTS

P.	Notice to the Authority of Labor Disputes	19
Q.	Patent Indemnity	19
R.	Use of Trade Names	19
S.	Rights in Technical Data	20
T.	Audit and Inspection of Records	21
U.	Gratuities	21
V.	Limitation on Withholding Payments	22
W.	New Material	22
X.	Order of Precedence	22
Y.	Correction of Deficiencies	22
	1. Definitions:	22
	2. General:	23
	3. Deficiencies in accepted supplies or services:	23
	4. Correction of Deficiencies by Contractor:	23
	5. Deficiencies in supplies or services not yet accepted:	23
	6. Extensions or Delays	23
	7. Contract Price	23
	8. Failure to correct:	24
Z.	Assignment	24
AA.	Certificates of Current Cost or Pricing Data	25
BB.	Cargo Preference	25
CC.	Buy America Act	25
DD.	Equal Opportunity	25
EE.	Nondiscrimination under Federal Grants	26
FF.	Rights in Data and Copyrights-FTA (June 1996)	27
GG.	Davis-Bacon Act	27
	1. Minimum wages	27
	2. Withholding	30
	3. Payrolls and basic records	31
	4. Apprentices and trainees	33
	5. Compliance with Copeland Act requirements	35
	6. Subcontracts	35
	7. Contract termination: debarment	35
	8. Compliance with Davis-Bacon	35
	9. Disputes concerning labor standards	35
	10. Certification of eligibility.	35
HH.	Contract Work Hours and Safety Standards Act	35
	1. Overtime requirements	36
	2. Violation; liability unpaid wages; liquidated damages	36
	3. Withholding for unpaid wages; liquidated damages	36
	4. Subcontracts	36
	5. Payrolls and basic records	36
	6. Contract Work Hours and Safety Standards Act	37
	7. Subcontracts	37
II.	Seismic Safety Requirements	38
JJ.	Energy Conservation Requirements	38

RHODE ISLAND PUBLIC TRANSIT AUTHORITY
Request for Proposals Number 13-31
TABLE OF CONTENTS

	KK.	Clean Air	38
	LL.	Clean Water	38
	MM.	Recovered Materials	38
	NN.	Fly America Requirements	39
	OO.	National Intelligent Transportation Systems Architecture	39
	PP.	Federal Changes	39
	QQ.	Incorporation of Federal Transit Administration (FTA) Terms	39
	RR.	Force Majeure	39
	SS.	Governing Law	40
	TT.	Indemnification	40
	UU.	Policy Concerning Federal and Stated False Claim Laws	40
		1. Prohibitions Against False Claims	40
		2. Prohibitions of the Federal False Claims Act	40
		3. Enforcement	41
	VV.	American with Disabilities Act	41
VI.		REQUEST FOR APPROVED EQUAL FORM	42
VII.		REQUIRED PROPOSAL SUBMISSIONS	43
VIII.		SOLICITATION FORM	44
IX.		OFFER FORM	45
X.		STATEMENT OF ELIGIBILITY FORM	46
XI.		AFFIDAVIT OF NON-COLLUSION FORM	47
XII.		CERTIFICATION OF RESTRICTIONS ON LOBBYING FORM	48
XIII.		BUY AMERICA CERTIFICATION REQUIREMENTS I	49
XIV.		BUY AMERICA CERTIFICATION REQUIREMENTS II	50
XV.		BUY AMERICA PRE-AWARD AND POST-DELIVERY AUDITS:	51
	A.	Prior to Contract award,	51
	B.	After delivery and acceptance of the vehicles,	51
	C.	Authority Review	51
XVI.		DISADVANTAGED BUSINESS ENTERPRISES PROGRAM	52
	A.	Policy	52
	B.	DBE Utilization	52
		1. DBE Utilization	52
	C.	Definitions.	53
		1. Joint Venture	53
		2. Disadvantaged Business	53
		3. Small Business Concern	53
		4. Socially and Economically Disadvantaged Individuals	53
		5. Recognition of DBE Commitment	54
		6. Submissions	54
		7. Procedure Prior to Contact Award	55
		8. Proposal, Execution & Compliance with Subcontracts	56
		9. Substitution of Subcontractors	56
		10. Program Compliance	56
		11. Maintenance of Records	57
		12. Contract Assurance	57
		13. Prompt Payment	57

	14. Monitoring Payments to DBEs	57
XVII.	DISADVANTAGED BUSINESS ENTERPRISE REQUIRED FORMS	58
A.	Attachment A	59
B.	Attachment B	60
C.	Attachment C	61
D.	Attachment D	62
E.	Attachment E	63
F.	Attachment F	64
XVIII.	PERFORMANCE BOND INFORMATION	65
XIX.	PROPOSAL GUARANTEE (SURETY)	65
XX.	REQUIRED INSURANCE	65
A.	Minimum limits	65
B.	Certificate Requirements	65
XXI.	GENERAL CONTRACT COMPLIANCE CERTIFICATE	67
A.	Equal Opportunity Clause	67
B.	Age Discrimination	68
C.	Employment of the Handicapped	68
XXII.	CERTIFICATE OF NON-SEGREGATED FACILITIES	70
XXIII.	NOTICE OF PROSPECTIVE SUBCONTRACTORS	71
A.	Affirmative Action Compliance Program	71
B.	Employer's Information Report (EE)-1) Form 100	71
C.	Notice to All Vendors	71
D.	Post Award Conference	71
XXIV.	GENERAL CONTRACT COMPLIANCE CERTIFICATE	72
XXV.	DAVIS BACON ACT COMPLIANCE	72
XXVI.	CERTIFICATION OF PRIMARY PARTICIPANT FORM	73
XXVII.	DEBARMENT CERTIFICATION	74
XXVIII.	CERTIFICATION OF A SUBCONTRACTOR FORM	74
XXIX.	NON-RESIDENT CONTRACTOR INFORMATION	75
XXX.	DRUG & ALCOHOL TESTING PROGRAM	76
XXXI.	DRUG AND ALCOHOL POLICY ACKNOWLEDGEMENT	76
XXXII.	SCOPE OF WORK	77
XXXIII.	PRICING SPECIFICATIONS	77
A.	Pricing Forms	77
XXXIV.	TECHNICAL SPECIFICATIONS	77
A.	Ticket Stock – Paper.	78
B.	Ticket Stock – Plastic.	78
C.	Magnetics	78
D.	Document Graphics	79
E.	Security	80
F.	Packaging	80
G.	Sample Approval	80
XXXV.	ACCEPTANCE TESTING	81
XXXVI.	REFERENCES	81
XXXVII.	DELIVERY SCHEDULE: TICKETS & PASS DOCUMENTS	81
XXXVIII.	DELIVERY LOCATION:	81

RHODE ISLAND PUBLIC TRANSIT AUTHORITY
Request for Proposals Number 13-31
TABLE OF CONTENTS

XXXIX.	NON-STOCK ITEMS	82
XL.	SILENCE OF SPECIFICATIONS.	82
XLI.	PROPOSAL EVALUATION CRITERIA	82
XLII.	CONTRACT DURATION	82
XLIII.	BASIS OF AWARD	82
XLIV.	FARE MEDIA PRICE SUBMITTAL WORKSHEET	83
A.	Base Contract Period: July 1, 2013 to June 30, 2014	83
B.	Option Year One: July 1, 2014 to June 30, 2015	83
C.	Option Year Two: July 1, 2015 to June 30, 2016	83
D.	Option Year Three: July 1, 2016 to June 30, 2017	84
E.	Option Year Four: July 1, 2017 to June 30, 2018	84
XLV.	SAMPLE FARE MEDIA	80
XLVI.	GFI TECHNICAL SPECIFICATIONS	86

RHODE ISLAND PUBLIC TRANSIT AUTHORITY
Request for Proposals Number 13-31

I. CALENDAR

A. Date of Invitation:

April 10, 2013

B. Pre-Proposal Conference:

1. **Date:** **Not Applicable**

2. **Time:** **1:00 p.m. Eastern Time**

3. **Place:** **RIPTA Board Conference Room**
269 Melrose Street, Providence, RI
Any and all appeals must be submitted in writing prior to the time and date set for the Pre-Proposal Meeting.

C. Request for Approved equals and Questions
must be submitted **ELECTRONICALLY IN MICROSOFT WORD FORMAT** to RIPTA Contracts Manager by:

1. **Date:** **Not Applicable**

2. **Time:** **1:00 p.m. Eastern Time**

3. **Response to approved equals: 10 - 14 days prior to proposal opening.**

D. Proposal Receipt:

1. **Date:** **May 15,2013**

2. **Time:** **1:00 p.m. Eastern Time**

II. NOTICE TO OFFERORS

A. DATE: April 10, 2013

The Rhode Island Public Transit Authority (RIPTA) is requesting proposals for the following:

Fare Media

All proposals shall be submitted in the required format and quantity as set forth in the RFP. This proposal must be received by May 15,2013 at 1:00 p.m. Eastern Time by the Purchasing Department, Room 217, 705 Elmwood Avenue Providence, Rhode Island 02907. **Please be advised that United Parcel Service does not deliver to this address.**

Award of contract is subject to financial assistance of 80% from the U.S. Department of Transportation (FTA Project RIPTA Operating Funds) and 20% from RIPTA. The successful proposer shall comply with the conditions and terms applicable thereunder.

The successful proposer shall be required to comply with all applicable Equal Opportunity and Disadvantaged Business Enterprise regulations. Proposers are encouraged to view the Rhode Island Minority Business Enterprise (RIMBE) website for a list of Disadvantaged Business Enterprise vendors that may be interested in working with your company on this proposal. All DBEs submitted must be certified by the State of Rhode Island at the time of proposal submittal. The RIMBE Website address is: http://www.mbe.ri.gov/search.php.

The Disadvantaged Business Enterprise goal for this project is: Not Applicable.%

The successful proposer shall be required to certify that he is not on the Comptroller General's List of Ineligible Contractors.

An electronic copy of the RFP is available on the State of Rhode Island, Department of Administration, Division of Purchases Website.
The website address is: *www.purchasing.ri.gov/RIVIP/ExternalBidSearch.asp*.
RIPTA Requests for Proposals can be Public Bid Opportunities, Quasi Public Sector, listed under the Rhode Island Public Transit Authority. ***Proposers must download the proposal documents and complete the required forms.***

If you are unable to access the Internet; a printed copy of the Proposal may be obtained from RIPTA's Purchasing Department by calling Michael J. McGrane at (401) 784-9500, ext. 214.

III. CONTACT LIST

PLEASE CONTACT THE FOLLOWING PERSONS FOR ANY QUESTIONS YOU MAY HAVE:

A. Specifications/Scope of Work
Ms. Maureen Neira
Phone (401) 784-9500 extension 134

B. Contracts Manager
Mr. Michael J. M^{c}Grane
Phone: (401) 784-9500 extension 214
mmcgrane@ripta.com

C. DBE Liaison Officer
Mrs. Lisa Hanson
Phone: (401) 784-9500 extension 125.
lhanson@ripta.com

IV. INSTRUCTIONS FOR PROPOSERS

A. Definition of Terms.

Whenever herein or in the proposal contract documents the following terms, pronouns or abbreviations are used, the intent and meaning shall be interpreted as follows:

1. Procuring agency
Procuring Agency is defined as the Rhode Island Public Transit Authority.

2. RIPTA
RIPTA shall refer to the Rhode Island Public Transit Authority.

3. Contractor
Contractor shall mean the successful proposer to whom a contract is awarded.

4. Request for Proposal (RFP)
Request for Proposal shall mean the complete assembly of related documents, whether attached or incorporated by reference, furnished by RIPTA for the purpose of proposing, including the Request for Proposal, the Instructions for Proposers, Supplemental Conditions, Specifications, Proposal Form, Proposal Attachments, and Addenda, if any. Proposals shall be in strict accordance with the Terms of the RFP.

5. Authorized Signature.
The person who is executing this contract on behalf of the Proposer and who is authorized to bind the Proposer.

6. Request for Proposal.
The advertisement of the issuance by RIPTA of a Request for Proposal, which is published, posted and sent to prospective Proposers informing interested persons of the proposed procurement.

7. Proposal Evaluation Factors/Criteria
Evaluation Factors/Criteria given in the scope of work are not listed in order of priority. The order of the listing has no relationship to the relative importance of the factors.

8. Basis of Award
The Contract will be awarded to the vendor that submits the proposal that is rated the overall best value to the Authority.

9. Notice of Award.
The receipt of a Purchase Order or Letter of Contract issued by RIPTA shall serve as notice of the award of contract.

10. Specifications.
The written description and statement of necessary requirements of the equipment/construction, supplies and/or service to be provided.

11. Tender
The Proposer's documents and all attachments tendered in response to the proposal requests.

B. Form of Proposal and Signature.

The proposal shall be presented with an original and Five copies on the forms provided herewith by RIPTA and shall be enclosed in a sealed envelope marked and addressed as required on the proposal form.

Depending upon whom the proposal is made by, the following signature and instructions must be followed:

1. **Sole Owner.**
   Proposal shall be signed with his full name, and his address shall be given.
2. **General Partnership.**
   Proposal shall be signed with the partnership name by a partner who shall also sign his/her own name, and the name and address of each partner shall be given.
3. **Limited Partnership**
   Proposal shall be signed with the partnership name by a general partner who has authorization to do so who shall also sign his/her own name.
4. **Corporation.**
   Proposal shall be signed by an officer or other individual who has the full and proper authorization to do so, and the corporate seal shall be affixed to the contract, or if the corporate seal is not affixed to the contract and it is signed by a person other than an officer, there must be attached to the contract a certified copy of a resolution of the corporation authorizing such officer or person to sign written contracts for and on behalf of the corporation.

C. Proposal.

The terms of the proposal must not be changed. All blank spaces in said form shall be properly filled. Alterations by erasure or interlineation must be explained or noted in the proposal over the signature of the Proposer. If the unit price and the total amount named by a Proposer for any item, do not agree, **the unit price** alone will be considered as representing the Proposer's intention.

D. Unauthorized Conditions.

Unauthorized conditions, limitations or provisions attached to a proposal will render it informal and may cause its rejection.

E. Submission of Proposal.

Prior to the hour specified in the Request for Proposal inviting sealed proposals, all proposals shall be delivered to the Contracts Manager at the address shown in the Request for Proposal.

Each proposal shall be in a sealed envelope properly labeled on the outside with the proposal number and description. No proposals received after said time or at any place other than the time and place as stated in the Request for Proposal will be considered. No proposal electronically transmitted , e.g. email and fax will be considered.

F. Modification or Withdrawal of Proposal.

A proposal may be modified or withdrawn by written or telegraphic notice received in the office designated in the Request for Proposal not later than the exact time set for receiving of proposals. A telegraphic notice of modification or withdrawal of a proposal telephoned by the receiving telegraphic office no later than the set for opening of proposals will be considered if the message is confirmed by the telegraph company by sending a copy of a written telegram which formed the basis of the telephone call. A proposal may be withdrawn in person by a Proposer or his/her authorized representative provided his/her identity is made known and he signs a receipt for the proposal if the withdrawal is prior to the exact time set for receiving the proposals. Modifications of proposals and requests for withdrawal of proposals which are received in the office designated in the Request for Proposals after the exact time set for opening are "late modifications" and "late withdrawals" respectively. A late modification or late withdrawal will be subject to the rules and procedures applicable to late proposals. A late modification of an otherwise successful proposal will be opened at any time it is received. If, in the judgment of the Director of Procurement, it makes the terms of the proposal more favorable to RIPTA, it will be presented to the Contract Manager and Director of Procurement for consideration.

G. Proposer Interviews or Presentations

The Authority reserves the right, at its sole discretion, to request proposal respondents to make presentations or interviews. This may be done in person, or through electronic means (i.e. telephone or via the internet). The purpose of this presentation is to enhance the presentation, not to amend it. Proposers should prepare their proposal responses based upon the assumption that there will not be interviews, unless specifically stated in the Scope of Work. The Written Proposal should reflect their best effort.

H. Samples

Samples, when required, must be submitted within the time specified, at no expense to RIPTA. If not, destroyed or used up during testing, samples will be returned upon request at the Proposer's expense.

I. Canvass of Proposals.

At the hour specified in the Request for Proposal, a designee will receive the proposals. An award will be made or proposals rejected by RIPTA within the time specified in the specifications or proposal forms, or if not specified, within a reasonable time after proposals have been opened.

J. Rejection of Proposals.

RIPTA reserves the right to reject any and all proposals. The right is reserved to reject any or all proposals, and to waive technical defects as the interest of RIPTA may require. Each Proposer shall be notified if all proposals are rejected.

K. Sales Tax Exemption.

RIPTA confirms there are no state, local or federal taxes applicable to this purchase.

L. Delivery Charges.
Unless otherwise stated in the RFP, Proposers shall include freight and/or delivery charges in the total price of their proposals.

M. Alternative Proposal
Submissions of an alternative proposal or proposals, except as specifically called for in the Specifications or RFP, will render the proposal informal and may cause its rejection.

N. Non-Collusive Affidavit.
The Proposer represents and warrants that its proposal is genuine and not sham or collusive or made in the interest or in behalf of any person not therein named, and that the Proposer has not, directly or indirectly, induced or solicited any other Proposer to submit a sham proposal or any other person, firm or corporation to refrain from proposing, and that the Proposer has not in any manner sought by collusion to secure itself an advantage over any other Proposer.

O. Interest of RIPTA Personnel.
The Proposer represents and warrants that neither the General Manager, nor any Board Member, nor any employee of RIPTA, is in any manner interested directly or indirectly in the proposal or in the contract, which may be made under it, or in any expected profits to arise therefrom.

P. Penalty for Collusion.
If at any time it shall be found that the person, firm or corporation to whom a contract has been awarded has, in presenting any proposal or proposals, colluded with any other party or parties, then the contract so awarded shall be **voidable** by RIPTA and the Contractor and his bondsmen shall be liable to RIPTA for all loss or damage which RIPTA may suffer thereby and the RIPTA Board may advertise for a new contract for said labor, supplies, materials, equipment or service.

Q. Proposal Acceptance Period
All proposals shall remain in effect one hundred twenty (120) calendar days from the date of proposal opening. Proposals offering less than one hundred twenty (120) calendar days for acceptance by RIPTA from the date set for opening will be considered non-responsive and will be rejected.

R. Postponement.
RIPTA reserves the right to postpone, for its own convenience, the date the proposal is to be received, but any Proposer whose proposal has already been submitted to RIPTA when the decision to postpone is made shall be afforded the opportunity to revise or withdraw its proposal.

S. Amendment and/or Postponement.
RIPTA reserves the right to revise or amend the specifications up to the time set for the receiving of proposals. Such revisions and addenda, if any, shall be announced by addenda to this solicitation. It shall be the responsibility of prospective proposers to check the State of Rhode Island, Department of Administration Division of Purchases Website

for any addenda. If the revisions and addenda require changes in quantities or price proposal, or both, the date set for receiving proposals may be postponed by such number of days as in the opinion of RIPTA shall enable Proposers to revise their proposals. In any case, proposal openings shall be at least seven (7) working days after the last addendum, and the addenda shall include an announcement of the new date, if applicable.

T. Single Proposal.

1. In the event a single proposal is received, RIPTA will, at its option, either conduct a price and/or cost analysis of the proposal and make the award by negotiation or reject the proposal and re-advertise. A price analysis is the process of examining the proposal and evaluating a prospective price without evaluating the separate cost elements. Price analysis shall be performed by comparison of the price quotations submitted on other current quotations, with published price lists, or other established or competitive prices. The comparison shall be made to a purchase of similar quantity and involving similar specifications. Where a difference exists, a detailed analysis must be made of this difference and costs attached thereto.

2. Where it is impossible to obtain a valid price analysis, it may be necessary for RIPTA to conduct a cost analysis of the proposal price. Cost analysis is the review and evaluation of a contractor's cost or pricing data and of the factors applied in projecting from such data the estimated costs of performing the contract, assuming reasonable economy and efficiency.

3. The price and/or cost analysis shall be made by RIPTA's Procurement Department.

U. Qualifications for Award.

The Proposer must be a person, firm or corporation that:

1. Has in operation, or has the capability to have in operation, a manufacturing plant adequate to assure delivery of all equipment within the time specified under this contract.

2. Has adequate service personnel, or has the capability to have such personnel, to satisfy any service problems that may arise during the warranty period.

3. Has the necessary facilities and financial resources or has the capability to obtain such facilities and resources to complete the contract in a satisfactory manner within the required time.

4. The Procuring agency shall have the right to conduct a pre-award survey on each Proposer. Doubt as to the capability or technical ability, productive capacity or financial strength, which cannot be

resolved affirmatively, shall require a determination of non-responsibility by RIPTA.

V. Ineligible Proposers.

The Proposer shall be required to certify, upon request, that it is not on he U.S. Comptroller General's Consolidated List of Persons or Firms currently Debarred for Violations of Various Public Contracts Incorporating Labor Standards Provisions.

W. Disadvantaged Business Enterprise

The Rhode Island Public Transit Authority will not discriminate on the basis of race, color, national origin, or sex in the award and performance of any DOT assisted contract or in the administration of its DBE Program or the requirements of 49 CFR part 26. RIPTA will take all necessary and reasonable steps under 49 CFR part 26 to ensure nondiscrimination in the award and administration of DOT assisted contracts. The recipient's DBE Program, as required by 49 CFR part 26 and as approved by DOT, is incorporated by reference in this agreement. Implementation of this program is a legal obligation and failure to carry out its terms shall be treated as a violation of this agreement. Upon notification to the Rhode Island Public Transit Authority of its failure to carry out its approved program the Department may impose sanctions as provided for under part 26 and may, in appropriate cases, refer the matter for enforcement under 18 U.S.C. 1001 and/or the Program Fraud Civil Remedies Action of 1986 (31 U.S.C. 3801 et. Seq).

X. Addenda.

RIPTA may issue addenda containing amendments to its proposal solicitation documents. Any addendum issued less than seven (7) days prior to the receipt of proposal shall, if necessary, contain a provision postponing the date of the receipt of proposal to a date that will provide Proposers adequate time to respond to the addenda. Addenda shall be numbered sequentially.

Y. Proposer's Requests and Appeals.

1. Appointments.

Proposers and suppliers may make appointments with the contact person listed in the specifications to discuss the specifications.

2. Amending Materials.

Any amending material issued by RIPTA pertaining to the proposal solicitation documents (including, without limitation: clarifications, approved equals, and corrections) shall be set forth in an addendum and sent to all parties who are on record as having obtained a copy of the proposal solicitation documents.

3. Appeal.

Should any Proposer or supplier choose to appeal RIPTA's decision, such appeal must be in writing and received by RIPTA not less than seven (7) calendar days before the date of receipt of proposal. RIPTA has no obligation to consider appeals received less than seven (7) calendar days before the date of the receipt of proposal.

4. Withdrawal.
The Proposer or supplier may withdraw its appeal at any time before RIPTA issues a final decision. There shall be no further review of the appeal after the final decision is issued.

5. Notification.
Should RIPTA postpone the date of the receipt of proposal owing to the appeal, RIPTA shall notify all parties who are on record as having obtained a copy of the proposal solicitation documents that an appeal has been filed and that the date of the receipt of proposal shall be postponed until RIPTA has issued its final decision. RIPTA shall issue appropriate amendments postponing the re-scheduling date of the receipt of proposal.

Z. Equal Employment Opportunity.
In connection with the execution of this contract, the Contractor shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, age, handicap or national origin. The contractor shall take affirmative action to insure that applicants are employed and that employees are treated during their employment, without regard to their race, religion, color, sex, age, handicap or national origin. Such actions shall include, but not limited to, the following: employment, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff, or termination, rates of pay, or other forms of compensation, and selection for training, including apprenticeship.

AA. Prohibited Interest.
No member, officer, or employee of RIPTA or of a local public body during his tenure or for one year thereafter shall have any interest, directly or indirectly, in this contract or the proceeds thereof.

BB. Interest of Members of Congress.
No member or delegate to the Congress of the United States shall be admitted to any share or part of this contract or to any benefit arising therefrom.

CC. Contract Commencement Date.
The contract commencement date shall be the date of the signing of the Purchase Order or by Letter of Contract signed by an authorized RIPTA employee.

DD. Notice, Waiver and Applicable Law.
Notice given to Contractor and RIPTA shall be given to the parties in writing by certified mail at the respective addresses set forth herein. Waiver by RIPTA of a breach by Contractor of any provision of this contract shall not be deemed a waiver of future compliance therewith, and such provision as well of future provisions hereunder, shall remain in full force and effect. The rights and duties of the parties hereto shall be determined by the laws of the State of Rhode Island, and to that end this agreement shall be considered and construed as a contract made an to be performed in the State of Rhode Island.

EE. Protest.

1. General.

Protests will be accepted from prospective proposers or Offerors whose direct economic interest would be affected by the award of a Contract or by failure to award a contract. The RIPTA Director of Purchasing will consider all protests or objections filed in a timely manner regarding the award of a contract, whether submitted before or after award. If the protest is oral and the matter cannot be otherwise resolved, written confirmation of the protest will be requested. Protest submissions should be concise, logically arranged, and clearly state the grounds for the protest. Protests must include at least the following information:

a. Name, address and telephone number of protester.

b. Identification of the solicitation or Contract number.

c. A detailed statement of the legal and factual grounds of protest, including copies of relevant documents

d. A statement as to what relief is requested.

e. Protest should be sent to:

Director of Procurement
RI Public Transit Authority
Room 217
705 Elmwood Avenue
Providence, RI 02907

f. Protests must be filed with the RIPTA in accordance with our procedures and time requirements. The protest to RIPTA must be complete and contain all the issues that the protester believes relevant. RIPTA will respond to each substantive issue raised in the protest. Failure to include an issue in the protest eliminates that issue from further consideration. All protest decisions entered by RIPTA are final in accordance with FTA "Third Party Contract" Regulation.

g. On occasion, when considered appropriate, an informal conference on the merits of the protest with all interested parties may be held.

FF. Protests Before Award

1. Solicitation Phase.

Protests concerning the solicitation must be submitted in writing five (5) working days prior to proposal opening or closing date for receipt of proposals. If the written protest is not received by the time specified, award may be made in the normal manner unless

the Director of Purchasing, upon investigation, finds that remedial action is required. Oral protests not followed up by a written protest will be disregarded.
Notice of a protest and the basis therefore will be given to all potential proposers or Offerors.

2. Pre-Award Phase.

When a protest against the making of an award is received after receipt of proposals but prior to award, the Director of Purchasing may determine to withhold the award pending disposition of the protest. The proposers or proposers whose proposals might become eligible for award should be requested, before expiration of the time for acceptance of their proposals, to extend the time for acceptance (with consent of sureties, if any) to avoid the need for readvertising. RIPTA will provide a written response to each material issue raised in the written protest.

Where a written protest against the making of an award is received in the time specified, award will not be made prior to five (5) working days after resolution of the protest or, if a protest has been filed with FTA during the pendency of that protest, unless RIPTA determines that:

a. The items to be procured are urgently required;

b. Delivery or performance will be unduly delayed by failure to make award promptly; or,

c. Failure to make award will otherwise cause undue harm to RIPTA or the Federal Government.

If award is made, the Director of Procurement will document the file to explain the need for an award, and will give written notice of the decision to proceed with the award to the protester and, as appropriate, to others concerned.

GG. Protests After Award.

A protest received not later than 10 (ten) working days after award shall be reviewed by the Director of Purchasing. The Contractor will, in any event, be furnished with the notice of protest and the basis therefore. When it appears likely that an award may be invalidated and a delay in receiving the supplies or services is not prejudicial to the Authority's interest, the Director of Purchasing should consider a mutual agreement with the Contractor to suspend performance on a no-cost basis.

HH. Source Selection and Contract Award

The contract shall be awarded with reasonable promptness by written notice to the responsive and responsible Proposer whose proposal will be evaluated using a best value approach. The ultimate selection of an offeror will be on the basis of overall best value to the Authority.

II. Title VI Assurances

Contractors and subcontractors will be required to comply with all requirements imposed by Title VI of the Civil Rights Act of 1964 (49 U>S>C 2000d), and the Assurances by RIPTA pursuant thereto.

JJ. Energy Conservation Requirements:

The Contractor agrees to comply with mandatory standards and policies relating to energy efficiency, which are contained in the State of Rhode Island Energy Conservation Plan issued in compliance with the Energy Policy and Conservation Act.

KK. Program Fraud

1. The Contractor acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S. C. § §3801 et. seq. and U. S. Department of Transportation regulations. "Program Fraud Civil Remedies" 49 C.F. R. Part 31, apply to its actions pertaining to this Project. Upon execution of the underlying contract, the Contractor certifies or affirms the truthfulness and accuracy of any statement it has made , it makes, it may make, or causes to be made, pertaining to the underlying contract or the Federal Transit Administration assisted project for which this contract work is being performed. In addition to other penalties that may be applicable, the Contractor further acknowledges that if it make, or causes to be made, a false , fictitious or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on the Contractor to the extent the Federal Government deems appropriate.
2. The Contractor also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission or certification to the Federal Government under a contract connected with a project that is financed in whole or in part with Federal assistance originally awarded by the FTA under the authority of 49 U.S.C. § 5307, the Government reserves the right to impose the penalties of 18 U.S.C. § 5307 (n) (1) on the Contractor, to the extend the Federal Government deems appropriate.
3. The Contractor agrees to include the above two clauses in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clauses shall not be modified, except to identify the subcontractor who will be subject to the provisions.

LL. No Government Obligation to Third Parties:

1. The Purchaser and the Contractor acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the underlying contract, absent the express written consent by the Federal Government, the Federal Government is not a party to this contract and shall not be subject to any obligations or liabilities to the Purchaser,

Contractor, or any other party (whether or not a party to that contract) pertaining to any matter resulting from the underlying contract.

2. The Contractor agrees to include the above clause in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

V. GENERAL PROVISIONS

A. Definitions:

As used throughout this Contract, the following terms shall have the meanings set forth below:

1. Authority

Authority means Rhode Island Public Transit Authority (RIPTA).

2. Contracting Manager

the person executing this Contract on behalf of the Authority, and his or her successor, and the term includes, except as otherwise provided in this Contract, the authorized representative of a Contracting Officer acting within the limits of his authority.

3. Directed, Ordered, designated or prescribed

Wherever in the scope of the work the words directed, ordered, designated, prescribed, or words of like importance are used, it shall be understood that the direction, requirement, order, designation, or prescription of the Contracting Manager is intended and similarly the words approved, acceptable, satisfactory, or words of like importance shall mean approved by, or acceptable to, satisfactory to the Contracting Officer, unless expressly stated.

B. Changes:

The Contracting Officer may at any time, by a written order, and without notice to the sureties, make changes within the general scope of this Contract. If any such changes causes an increase or decrease in the cost of, or the time required for, the performance of any part of the work under this Contract, whether changed or not changed by the order, the Contracting officer shall make an equitable adjustment in the Contract price, the delivery schedule, or both, and shall modify the Contract.

The Contractor must assert its right to an adjustment under this article within 30 days from the date of receipt of the written order. Failure to agree to any adjustment shall be a dispute under the Disputes article. However, nothing in this article shall excuse the Contractor from proceeding with the contract as changed.

C. Extras:

Except as otherwise provided in this Contract, no payment for extras shall be made unless such extras and the price therefore have been authorized in writing in advance by the Contracting Officer.

D. Inspection:

All supplies, which term throughout this article includes without limitation raw materials, components, intermediate assemblies, and end products, shall be subject to inspection and test by the Authority, to the extent practicable at all times and places including the period of manufacture, and in any event prior to acceptance.

In case any supplies or lots of supplies are defective in material or workmanship or otherwise not in conformity within the requirements of this Contract, the Authority shall have the right either to reject them or require their correction. If any inspection or test is made by the Authority on the premises of the Contractor or a subcontractor, the Contractor without additional charge shall provide all reasonable facilities and assistance for the safety and convenience of the Authority inspectors in the performance of their duties.

All inspections and test by the Authority shall be performed in such a manner as not to unduly delay this work. The Authority reserves the right to charge to the Contractor any additional cost of Authority inspection and test when supplies are not ready at the time such inspection and test is requested by the Contractor or when re-inspection or retest is necessitated by prior rejection. Acceptance or rejection of the supplies shall be made as promptly as practicable after delivery, except as otherwise provided in this Contract; but failure to inspect and accept or reject supplies shall neither relieve the Contractor from responsibility for such supplies as are not in accordance with the contract requirements nor impose liability on the Authority therefore. The inspection and test by the Authority of any supplies or lots thereof does not relieve the Contractor from any responsibility regarding defects or other failures to meet the Contract requirements, which may be discovered prior to acceptance. Except as otherwise provided in this Contract, acceptance shall be conclusive except as regard latent defects, fraud, or such gross mistakes as amount to fraud. The Contractor shall provide and maintain an inspection system acceptable to the Authority covering the supplies hereunder. Records of all inspection work by the Contractor shall be kept complete and available to the Authority during the performance of this Contract and for such longer period as may be specified elsewhere in this Contract.

E. Responsible:

Notwithstanding the requirements for any Authority inspection and test contained in Specifications applicable to this Contract, except where specialized inspections or tests are specified for performance solely by the Authority, the Contractor shall perform or have performed the inspections and tests required to substantiate that the supplies and services provided under the contract conform to the Drawing, Specifications and Contract requirements.

F. Title and Risk of Loss

Unless this Contract specifically provides for earlier passage of title, title to supplies covered by this Contract shall pass to the Authority upon formal acceptance. Unless this Contract specifically provides otherwise,

risk of loss of or damage to supplies covered by this Contract shall remain with the Contractor, until acceptance by the Authority.

Notwithstanding the above, the risk of loss of or damage to supplies which so fail to conform to the Contract as to give a right of rejection shall remain with the Contractor until cure or acceptance, at which time the above shall apply.

G. Payments

The Contractor shall be paid, upon the submission of proper invoices or vouchers, the prices stipulated herein for supplies delivered and accepted or services rendered and accepted, less deductions, if any, as specified. The failure to perform may result in partial or full suspension of payment and/or process payment. The Authority's payment terms are 60 days after approval of an invoice unless otherwise negotiated.

H. Stop Work Order

The Contracting Manager may, at any time, by written order to the Contractor, require the Contractor to stop all, or part of the work called for by this Contract. Any such order shall be specifically identified as a STOP WORK ORDER issued pursuant to this article. Upon receipt of such an order, the Contractor shall forthwith comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the order during the period of work stoppage.

I. Disputes

1. Except as otherwise provided in this Contract, any dispute concerning a question of fact arising under this Contract which is not disposed of by agreement shall be decided by the Contracting Officer, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the Contractor. The decision of the Contracting Officer shall be final and conclusive unless, within 30 days from the date of receipt of such copy, the Contractor mails or otherwise furnishes to the Contracting Officer a written appeal addressed to the General Manager. The decision of the General Manager or his/her duly authorized representative for the determination of such appeals shall be final and conclusive unless determined by a court of competent jurisdiction to have been fraudulent, or capricious, or arbitrary, or so grossly erroneous as necessarily to imply bad faith, or is not supported by substantial evidence. In connection with any appeal proceeding under this article, the Contractor shall be awarded an opportunity to be heard and to offer evidence in support of his appeal. Pending final decision of a dispute hereunder, the Contractor shall proceed diligently with the performance of the contract and in accordance with the Contracting Officer's decision.
2. This **DISPUTES** article does not preclude consideration of questions of law in connection with decisions provided for in paragraph a. above. Nothing in this Contract, however, shall be construed as making the final decisions of the General Manger of his/her representative on a question of law.

J. Default

1. The Authority may, subject to the provisions of paragraph b. below, by written notice of default to the Contractor, terminate the whole or any part of this Contract in any one of the following circumstances:
   a. If the Contractor fails to make delivery of the supplies or to satisfactorily perform the services within the time specified herein or any extension thereof; or
   b. If the Contractor fails to perform any of the other provisions of this Contractor, or so fails to make its terms, and in either of these two circumstances does not cure such failure within a period of 10 days (or such longer period of as the Contracting Officer may authorize in writing) after receipt of notice from the Contracting Officer specifying such failure

2. Default without the fault or negligence of the Contractor. Such causes may include, but are restricted to, acts of God or of the public enemy, acts of the Government in its sovereign capacity or the Authority in its contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather; but in every case the failure to perform must be beyond the control and without the fault or negligence of the Contractor.

3. If the Contractor fails to deliver the supplies or satisfactorily perform the services within the time specified in this Contract, or any extension thereof, the actual damage to the Authority for the delay will be difficult or impossible to determine. Therefore in lieu of actual damages, the Contractor shall pay to the Authority as fixed, agreed and liquidated damages for each calendar day of delay, the amount set forth elsewhere in this Contract. The Contractor shall not be charged with liquidated damages when the delay arises out of causes beyond the control and without the fault or negligence of the Contractor, and in such event, subject to this DISPUTES article, the Contracting Officer shall ascertain the facts and extent of the delay and shall extend the time for performance of the contract when in his judgment the findings of fact justify an extension.

4. The rights and remedies of the Authority provided in this article shall not be exclusive and are in addition to any other rights and remedies provided by law or under this Contract.

K. Termination for Convenience of the Authority

The performance of work under this Contract may be terminated by the Authority in accordance with this article in whole, or from time to time in part, whenever the Contracting Officer shall determine that such termination is in the best interest of the Authority. Any such termination shall be effected by delivery to the Contractor of a Notice of Termination specifying the extent to which performance of work under the contract is terminated, and the date upon which such termination becomes effective.

After receipt of a Notice of Termination, the Contractor shall submit to the Contracting Officer his termination claim, in the form and with certification prescribed by the Contracting Officer. Such claims shall be submitted promptly by in no event later than one year from the effective date of termination. Upon failure of the Contractor to submit his termination claim within the time allowed, the Contracting Officer may, subject to any review required by the contracting agency's procedures in effect as of the date of execution of this Contract, determine, on the basis of information available to him, the amount, if any, due the Contractor by reason of the termination and shall thereupon pay to the Contractor the amount so determined.

In the event of the failure of the Contractor and the Contracting Officer to agree upon the whole amount to be paid the Contractor by reason of the termination of work pursuant to this article, the Contracting Officer shall, subject to any review by the contracting agency's procedures in effect as of the date of execution of this Contract, determine, on the basis of information available to him, the amount if any, due the Contractor by reason of the termination.

Costs claimed, agreed to , or determined pursuant to this paragraph shall be in accordance with the applicable with the applicable contract cost principles and procedures of the Federal Acquisition Regulations (48 CFR 31.1) in effect on the date of this Contract. The Contractor shall have the right to appeal, under the DISPUTES article of this Contract from any determination made by the Contracting Officer, except that, if the Contractor has failed to submit his claim within the time provided above and has failed t request extension of such time, he shall have no such right of appeal. Unless otherwise provided for in this Contract, or by applicable statue, the Contractor, from the effective date of termination and for a period of three years after final settlement under this Contract, shall preserve and make available to the Authority at all reasonable times at the office of the Contractor but without direct charge to the Authority, all his books, records, documents, and other evidence bearing on the costs and expenses of the Contractor under this Contract and relating to the work terminated hereunder, or, to the extent approved by the Contracting Officer, photographs, micro photographs, or other authentic reproductions thereof.

L. Federal, State and Local Taxes

Except as may be otherwise provided in this Contract, the Contract price includes all applicable Federal, State, and Local taxed and duties. The Authority upon the request of the Contractor shall, without further liability, furnish evidence appropriate to establish exemption from any Federal, State, or Local tax.

M. Walsh-Healey Public Contracts Act

If this contract is for the manufacture or furnishing of materials, supplies articles, or equipment in an amount which exceeds or may exceeds or exceed $10,000 and is otherwise subject to the Walsh-Healey Public Contract Act, as amended (41 U.S.C. 34-35), there are hereby incorporated by reference all representations and stipulations required by

said Act and regulations issued thereunder by the Secretary of Labor, such representations of the Secretary of Labor which are now or may hereafter be in effect.

N. Officials Not to Benefit

No member, officer, or employee of the Authority during his tenure or one year thereafter shall have any interest, direct or indirect, in this Contract or the proceeds thereof.

O. Covenant against Contingent Fees

The Contractor warrants that no person or selling agency has been employed or retained to solicit or secure this Contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty, the Authority shall have the right to annul this Contract without liability or in its discretion, to full amount of such commission, percentage, brokerage, or contingent fee.

P. Notice to the Authority of Labor Disputes

Whenever the Contractor has knowledge that any or potential labor disputes is delaying or threatens to delay the timely performance of this Contract, the Contractor shall immediately give notice thereof, including all relevant information with respect thereto, to the Contracting Officer. The Contractor agrees to insert the substance of this clause, in any subcontract hereunder as to which a labor dispute may delay the timely performance of this Contract; except that each such subcontract shall provide that in the event its timely performance is delayed or threatened by delay by any actual or potential labor dispute, the subcontractor shall immediately notify his next higher tier subcontractor, or the Contractor, as the case may be, of all relevant information with respect to such dispute.

Q. Patent Indemnity

1. If the amount of this Contract is in excess of $10,000, the Contractor shall indemnify the Authority and its officers, agents, and employees against liability, including costs, for infringement of any United States letters patent arising out of the manufacture or delivery of supplies under this Contract.
2. In addition, if specifically requested by the Contracting Officer prior to execution of the Contract, a copy of the current license agreement and identification of applicable claims of specific patents shall be furnished.

R. Use of Trade Names

Any trade names used in this document are merely used for a point of reference. The Authority will consider submission of approved equals on any or all products specified. Use of trade names by the Authority bears no actual or implicit approval for the violation of any current or pending patents or copyrights.

S. Rights in Technical Data

1. The Authority shall have the right to use, duplicate or disclose technical data, which includes computer software, in whole or in part, in any manner and for any purpose whatsoever, and to have or permit others to do so:
   a. Any manuals, instructional materials prepared for installation, operation, maintenance or training purposes;
   b. Technical data pertaining to end items, components or processes which were prepared for the purpose of identifying sources, size, configuration, mating and attachment characteristics, functional characteristics and performance requirements ("for, fit and function: data; e/g/ specification control drawing, catalog sheets, outline drawing; except that for computer software it means data identifying source, functional characteristics, and performance requirements but specifically excludes the source code, algorithm, process, formulae, and flow charts of the software);
   c. Other technical data which has been, or is normally furnished without restriction by the Contractor or subcontractor;
   d. Other specifically described technical data, which the parties have agreed will be furnished without restriction.
2. The Authority shall have the right to use, duplicate, or disclose technical data other than that defined in paragraph a. in whole or in part, with the express limitation that such technical data shall not, without the written permission of the party furnishing such technical data, be
   a. released or disclosed in part by the Authority for manufacture, or
   b. used in whole or in part by the Authority for manufacture, or
   c. used by a party other than the Authority except for emergency repair or overhaul work only, by or for the Authority where the item or process concerned is not otherwise reasonably available to enable timely performance of the work; provided, that the release or disclosure thereof outside the Authority shall be made subject to a prohibition against further use, release or disclosure.
3. Technical data provided in accordance with the provisions of paragraph b. shall be identified by a legend, which suitably recites the aforesaid limitation. Nothing herein shall impair the right of the Authority to use similar or identical data acquired from other sources.
4. The term technical data as used in this article means technical writing, computer software, sound recording, pictorial reproductions, drawings, or other representations and works of a technical nature, whether or not copyrighted, which are specified to be delivered pursuant to this Contract. The term does not include financial reports, cost analysis, and other information incidental to Contract administration. Computer software as used

in this article means computer programs, computer databases, and documentation.

5. Material covered by copyright:
   a. The Contractor agrees to and does hereby grant to the Authority, and to its officers, agents and employees acting within the scope of their official duties, a royalty-free, nonexclusive and irrevocable license throughout the world for Authority purposes to publish, translate, reproduce, deliver, perform, dispose of, and to authorize others to do so, all technical data now or hereafter covered by copyright.
   b. No such copyright matter shall be included in technical data furnished hereunder without the written permission of the copyright owner for the Authority (or higher-tier contractor) promptly and in reasonable written detail each notice or claim of copyright infringement received by the Contractor with respect to any technical data delivered hereunder.
6. Relation to patents: Nothing contained in this article shall imply a license to the Authority under any patent, or be construed as affecting the scope of any license or other right otherwise granted to the Authority under any patent.
7. Any dispute under this article shall be subject to the Disputes article of this contract

T. Audit and Inspection of Records

The Contractor shall maintain records, and the Contracting Officer, the State of Rhode Island, the U.S. Department of Transportation, and the Comptroller General of the United States or any of their duly authorized representatives shall, until the expiration of three years after final payment under this Contract, have access to and the right to examine any directly pertinent books, documents, papers and records of such contractor, involving transactions related to the Contract, for the purpose of making audit, examination, excerpts and transactions.

The Contractor further agrees to include in all his subcontracts hereunder a provision to the effect that the subcontractor agrees that the Contracting Officer, the State of Rhode Island, the U.S. Department of Transportation and the Comptroller General of the United States or any of their Duly authorized representatives shall, until the expiration of three years after final payment under the Contract, have access to and the right to examine any directly pertinent books, documents, papers and records of such subcontractor, involving transactions related to the subcontract, for the purpose of making audit, examination, excerpts and transcription.

U. Gratuities

In connection with performance of work required under this Contract, or any changes or modifications relative thereto, the giving of or offering to give gratuities (in the form of entertainment, gifts or otherwise) by the Contractor, or any agent, representative or other person deemed to be acting on behalf of the Contractor, or any supplier or subcontractor furnishing material to or performing work under this Contract, or agent, representative or other person deemed to be acting on behalf of such

supplier or subcontractor, to any Director, Officer or employee of the Authority; or to any Director, employee or agent of any of the Authority's agents, consultants, representatives or other persons deemed to be acting for or on behalf of the Authority with a view toward securing a contract or securing favorable treatment with respect to the awarding to the awarding or amending, or the making of any determinations with respect to the performing of such contract is expressly forbidden. The terms of this GRATUITIES article shall be strictly construed and enforced in the event of violations hereto.

V. Limitation on Withholding Payments

If more than one article or schedule provision of this Contract authorized the temporary withholding of amounts otherwise payable to the Contractor for supplies delivered or services performed, the total of the amounts so withheld at any one time shall not exceed the greatest amount which may be withheld under any one such article or schedule provision at that time; provided, that this limitation shall not apply to:

1. Withholdings pursuant to any clause relating to wages or hours of employees;
2. Withholdings not specifically provided for by this Contract; and
3. The recovery of overpayment.

W. New Material

The Contractor represents that the supplies and components to be provided under this Contract are new (not used or reconditioned, and not of such age or so deteriorated as to impair their usefulness or safety).

X. Order of Precedence

In the event of an inconsistency in the Contract, unless otherwise provided herein, the inconsistency shall be resolved by giving precedence in the following order:

1. The Proposal Schedule;
2. Special Conditions;
3. General Provisions;
4. The other provisions of the Contract, whether incorporated by reference or otherwise;
5. The Specifications; and
6. Drawings.

Y. Correction of Deficiencies

1. Definitions:

As used in this article:

a. Deficiency means any condition or characteristics in any supplies (which term shall include related technical data) or services furnished hereunder, which is not in compliance with the requirements of this Contract.

b. Correction means any and all actions necessary to eliminate any and all deficiencies.

c. Supplies mean the end item(s) furnished by the Contractor and related services required under this Contract.

2. General:

a. The rights and remedies of the Authority shall not be affected in any way by any other provisions under this Contract concerning the conclusiveness of inspection and acceptance.

b. The Contractor shall not be responsible under this article for the correction of deficiencies caused by the Authority. These shall be no extension in time for performance; no increase in contract price for the correction of deficiencies that are the responsibility of the Contractor, his suppliers, and/or subcontractors.

3. Deficiencies in accepted supplies or services:

If the Contracting Officer determines that a deficiency exists in any of the supplies or services accepted by the Authority under this Contract, he shall promptly notify the Contractor of the deficiency, in writing, within 30 days. Upon timely notification of the existence of such a deficiency, or if the Contractor independently discovers a deficiency in accepted supplies or services, the Contractor shall promptly submit to the Contracting Officer his recommendation for corrective actions, together with supporting information in sufficient detail for the Contracting Officer to determine what corrective action, if any, shall be undertaken.

4. Correction of Deficiencies by Contractor:

The Contractor shall promptly comply with any timely written direction by the Contracting Officer to correct or partially correct a deficiency, at no increase in the Contract price. The Contractor shall also prepare and furnish to the Authority data and reports applicable to any correction required under this article (including revision and updating of all other affected data called for under this Contract) at no increase in the Contract price.

5. Deficiencies in supplies or services not yet accepted:

If the Contractor becomes aware at any time before acceptance by the Authority (whether before or after tender to the Authority) that a deficiency exists in any supplies or services, he shall promptly correct the deficiency or, if he elects to invoke the procedures in paragraph c. above he shall promptly communicate information concerning the deficiency to the Contracting Officer, in writing, together with his detailed recommendation for corrective action.

6. Extensions or Delays

In no event shall the Authority be responsible for extension or delays in the scheduled deliveries or periods of performance under this Contract as a result of the Contractor's obligations to correct deficiencies, nor shall there be any adjustment of delivery schedule or period of performance as a result of corrections of deficiencies, except as may be agreed to by the Authority in a supplemental agreement with adequate consideration.

7. Contract Price

It is hereby specifically recognized and agreed by the parties hereto that this article shall not be construed as obligating the Authority to increase the Contract price of this Contract.

8. Failure to correct:

If the Contractor fails or refuses to promptly rectify the deficiency the Contracting Officer shall give the Contractor written notice specifying the failure or refusal and setting a period after receipt of the notice within which it must be cured. If the failure or refusal is not cured within the specified period, the Contracting Officer may, by contract or otherwise, as required:

a. Obtain detailed recommendations for corrective action;
b. Correct the supplies or services, or
c. Replace the supplies or services; and if the Contractor fails to furnish timely disposition instructions, the Contracting Officer may dispose of nonconforming supplies for the Contractor's account in a reasonable manner, in which case the Authority is entitled to reimbursement from the Contractor or from the proceeds for the reasonable expenses of case and disposition, as well as for excess costs incurred or to be incurred; and
d. Obtain applicable data and reports; and charge to the Contractor the cost occasioned the Authority thereby.
e. Impose Liquidated Damages in accordance the terms of this document
f. Terminate the contract. Termination of contract by RIPTA does not relieve the contractor of any liquidated damages imposed by the Authority.

Z. Assignment

1. The Contractor shall not transfer the rights and obligations of the Contract to third parties without the prior written approval of the Authority's Contracting Officer. After review of facts and circumstances without exception the assignment shall not be approved unless the surety, in writing, agrees to that assignment and accepts the assignee as the Contractor and principal on the payment and/or performance bonds.
2. If this Contract provides for payments aggregating $1,000 or more, claims for monies due or to become due the Contractor from the Authority under this Contract may be assigned to a bank, trust company, or other financing institution, including any Federal lending agency, any may thereafter by further assigned and reassigned to any institution. (Notice of such assignment shall be made to the Authority.) Any such assignment or reassignment shall cover all amounts payable under this Contract and not already paid, and shall not be made to more than one party, except that any such assignment or reassignment or reassignment may be made to one party as agent or trustee for two or more parties participating in such financing. It is the Authority's intent to recognize only bona fide lending institutions, therefore, assignment to any private corporation, business or individual, which does not qualify as such, is specifically prohibited.
3. Any attempt to transfer by assignment not authorized by this article shall constitute a breach of the Contract and the Authority may for such cause terminate the right of the Contractor to

proceed as provided in the DEFAULT article of these General Provisions, and the Contractor and his sureties shall be liable to the Authority for any excess costs incurred by the Authority.

4. The Rhode Island Public Transit Authority may assign some or all of its rights to purchase the items specified in this contract to one or more third parties, provided, however, that nay such assignment shall not relieve RIPTA of its obligations under this contract unless otherwise agreed to by Contractor in writing.

AA. Certificates of Current Cost or Pricing Data

The Contractor shall provide a Certificate of Current Cost or Pricing Data as required in Subpart 15.804 of the Federal Acquisition Regulations (48 CFR 15.804) in support of any negotiated contract expected to exceed $100,000 any modification to a formally advertised or negotiated contract on which the aggregate of the increase and decrease in cost are expected to exceed $100,000; the Contracting Officer at his discretion may request cost or pricing data for modifications on which cost are $100,000 or less and an attendant certificate of current cost or pricing data.

BB. Cargo Preference

Use of United States Flag Vessels

Pursuant to Pub. L 664 (56 U.S.C. 1241 (b)):

"Cargo Preference-Use of United States-Flag Vessels

The Contractor agrees

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk cargo liners, and tankers) involved, whenever shipping any equipment, materials, or commodities pursuant to this Contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.
2. To furnish within 20 days following the date of loading for shipments originating within the United States, or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, "on-board" commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (1) above to the Grantee (through the prime Contractor in the care of subcontractor bills-of lading) and to the Division of National Cargo, Officer of Market Development, Maritime Administration, Washington, D.C. 20230, marked with appropriate identification of the Project.
3. To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this Contract.

CC. Buy America Act

The Contractor agrees to comply with 49 U.S.C. §533(j), and its implementing regulations at 49 C.F.R. Part 661, any amendments thereto, and any implementing guidelines issued by FTA.

DD. Equal Opportunity

1. Race, Color, Creed, National Origin, Sex.

In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. § 2000e, and Federal transit laws at 49 U.S.C. § 5332, the Contractor agrees to comply with all applicable equal employment opportunity requirements of U.S. Department of Labor (U.S. DOL) regulations, " Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor," 41 CFR Parts 60 et seq., (which implements Executive Order No. 11246, "Equal Employment Opportunity," as amended by Executive Order No. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," 42 U.S.C. § 2000e note), and with any applicable Federal statutes, executive orders regulations, and Federal polices that may in the future affect construction activities undertaken in the course of the Project. The contract agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, creed, national origin, sex, or age. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

2. Age

In accordance with section 4 of the Age Discrimination in Employment Act of 1967, as amended, 29, U.S.C. § 623 and Federal Transit Law at 49 U.S.C. § 5332, the Contractor agrees to refrain from discrimination against present and prospective employees for reason of age. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

3. Disabilities

In accordance with section 102 of the Americans with Disabilities Act, as amended, 42 U.S.C. § 12112, the Contractor agrees that it will comply with the requirements of U.S. Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 CFR Part 1630, pertaining to employment of persons with disabilities. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

The contractor also agrees to include these requirements in each subcontract financed in whole or in part with Federal assistance provided by FTA, modified only if necessary to identify the affected parties.

EE. Nondiscrimination under Federal Grants

In accordance with Title VI of the Civil Rights Act, as amended, 42 U.S.C. §2000d, section 303 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. §6102, section 202 of the Americans with Disabilities Act of 1990, 42 U.S.C. § 12132, and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, creed, national origin, sex, age, or disability. In addition, the Contractor agrees to comply with

applicable Federal implementing regulations and other implementing requirements FTA may issue.

FF. Rights in Data and Copyrights-FTA (June 1996)

The term "subject data" used in this section means recorded information, whether or not copyrighted, that is delivered or specified to be delivered under this contract. The term includes graphic or pictorial delineation in media such as drawings or photographs; text in specifications or related performance or design-type documents; machine forms such as punched cards, magnetic tape, or computer memory printouts; and information retained in computer memory. Example include, but are not limited to: computer software, engineering drawings and associated lists, specifications, standards, process sheets, manuals, technical reports, catalog item identifications, and related information. The term "subject data" does not include financial reports, cost analyses, and similar information incidental to Project administration.

When the Federal Transit Administration (FTA) provides financial assistance for a planning, research, development, or a demonstration project, it is FTA's general intention to increase mass transportation knowledge, rather than limit the benefits of the Project to participants in the Project. Therefore, unless FTA determines otherwise, the Contractor agrees that FTA may make available to any FTA recipient, subrecipient, third party contractor, or third party subcontractor, either FTA's license in the copyright to the subject data derived under this contract or a copy of the subject data as defined in subsection a. of this clause and shall be delivered as the Government may direct. Unless prohibited by state law, the Contractor agrees to indemnify, save, and hold harmless RIPTA and the Government, their officers, agents, and employees acting within the scope of their official duties against any liability, including costs and expenses, resulting from any willful or intentional violation by the contractor of proprietary rights, copyrights, or right of privacy, arising out of the publication, translation, reproduction, delivery, use, or disposition of any data furnished under this Contract. The Contractor shall not be required to indemnify RIPTA and the Government for any such liability arising out of the wrongful acts of employees or agents of RIPTA and the Government.

GG. Davis-Bacon Act

40 USC &167; 276a -276a-5 (1998) 29 CFR § 5 (1999)

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which

is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:
   i. Except with respect to helpers as defined as 29 CFR 5.2(n)(4), the work to be performed by the classification requested is not performed by a classification in the wage determination; and
   ii. The classification is utilized in the area by the construction industry; and
   iii. The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and
   iv. With respect to helpers as defined in 29 CFR 5.2(n)(4), such a classification prevails in the area in which the work is performed.

c. If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the

classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

d. In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

e. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii) (B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

f. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

g. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

h. The contracting officer shall require that any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an

additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

i. The work to be performed by the classification requested is not performed by a classification in the wage determination; and

ii. The classification is utilized in the area by the construction industry; and

iii. The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

i. If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

j. In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination with 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

k. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(v) (B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

2. Withholding

The Rhode Island Public Transit Authority shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract

subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the Rhode Island Public Transit Authority may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. i. The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Rhode Island Public Transit Authority for transmission to the Federal Transit Administration. The payrolls submitted shall set out

accurately and completely all of the information required to be maintained under 29 CFR part 5. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U.S. Government Printing Office, Washington, DC 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.

ii. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
(1) That the payroll for the payroll period contains the information required to be maintained under 29 CFR part 5 and that such information is correct and complete;
(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;
(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

c. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

d. The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the Federal Transit Administration or the Department of Labor, and shall permit such representatives to interview employees during working

hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices - Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the

Administrator of the Wage and Hour Division of the U.S. Department of Labor determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees - Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity - The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity

requirements of Executive Order 11246, as amended, and 29 CFR part 30.

5. Compliance with Copeland Act requirements

The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts

The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the Federal Transit Administration may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment

A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements

All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards

Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001

HH. Contract Work Hours and Safety Standards Act

40 U.S.C. 327-333 (1995) 29C.F.R. 5 (1995) 29 C.F.R. 1926 (1995)

1. **Overtime requirements**
No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such to work in excess of forty hours in such workweek unless such laborers or mechanics receive compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. **Violation; liability unpaid wages; liquidated damages**
In the event of any violation of the clauses set forth in paragraph (1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clauses set forth in paragraph (1) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clauses set forth in paragraph (1) of this section.

3. **Withholding for unpaid wages; liquidated damages**
The Rhode Island Public Transit Authority shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clauses set forth in paragraph (2) of this section.

4. **Subcontracts**
The contractor or subcontractor shall insert in any subcontracts the clauses set forth in this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in this section. (Section 102 nonconstruction contracts should also have the following provision:)

5. **Payrolls and basic records**
Payrolls and basic records relating theretoshall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the nams, address, and social security number of each

worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Beacon Act), daily and weekly number of hours worked, deductions. Whenever the made and actual wages paid Secreary iof labor has found under 29 CFR 5.5 (a)(1)(iv) that the wages of any laborer or mechanic included the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Beacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the regisration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

6. Contract Work Hours and Safety Standards Act

The contractor agrees to comply with section 107 of the Contract Work Hours and Safety Standards Act, 40 U.S.C. section 333, and applicable DOL regulations, “Safety and Health Regulations for Construction” 29 C.F.R. Part 1926. Among other things, the Contractor agrees that it will not require any laborer of mechanic to work in unsanitary, hazardous, or dangerous surroundings or working conditions.

7. Subcontracts

The Contractor also agrees to include the requirements of the section in each. The term “subcontract” under this section is considered to refer to a person who agrees to perform any part of the labor or material requirements of a contract for construction, alteration or repair. A person who undertakes to perform a portion of a contract involving the furnishing of supplies or materials will be considered a “subcontractor” under this section if the work in question involves the performance of construction work and is to be performed: (1) directly on or near the construction site, or (2) by the employer for the specific project on a customized basis. Thus, a supplier of materials, which will become an integral part of the construction is a “subcontractor” if the supplier fabricates or assembles the goods or materials in question specifically for the construction project and the work involved may said to be construction activity. If goods or materials in question are ordinarily sold to other customers from regular inventory, the supplier is not a “subcontractor.” The requirements of this section do not apply to contracts or subcontracts for the purchase of supplies or materials or articles normally available on the open market.

II. Seismic Safety Requirements

42 U.S.C. 7701 et seq. 49 CFR Part 41

The contractor agrees that any new building or addition to an existing building will be designed and constructed in accordance with the standards for Seismic Safety required in Department of Transportation Seismic Safety Regulations 49 CFR Part 41 and will certify to compliance to the extent required by the regulation. The contractor also agrees to ensure that all work performed under this contract including work performed by a subcontractor is in compliance with the standards required by the Seismic Safety Regulations and the certification of compliance issued on the project.

JJ. Energy Conservation Requirements

42 U.S.C. 6321 et seq. 49 CFR Part 18

The contractor agrees to comply with mandatory standards and policies relating to energy efficiency, which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act.

KK. Clean Air

42 U.S.C. 7401 et Seq 40 CFR 15.61 49 CFR Part 18

1 The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §§ 7401 et Seq . The Contractor agrees to report each violation to the Purchaser and understands and agrees that the Purchaser will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office.

2. The Contractor also agrees to include these requirements in each subcontract exceeding $100,000 financed in whole or in part with Federal assistance provided by FTA.

LL. Clean Water

1 The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et Seq . The Contractor agrees to report each violation to the Purchaser and understands and agrees that the Purchaser will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office.

2 The Contractor also agrees to include these requirements in each subcontract exceeding $100,000 financed in whole or in part with Federal assistance provided by FTA.

MM. Recovered Materials

The contractor agrees to comply with all the requirements of Section 6002 of the Resource Conservation and Recovery Act (RCRA), as amended (42 U.S.C. 6962), including but not limited to the regulatory provisions of 40 CFR Part 247, and Executive Order 12873, as they apply to the procurement of the items designated in Subpart B of 40 CFR Part 247.

NN. Fly America Requirements

The Contractor agrees to comply with 49 U.S.C. 40118 (the "Fly America" Act) in accordance with the General Services Administration's regulations at 41 CFR Part 301-10, which provide that recipients and subrecipients of Federal funds and their contractors are required to use U.S. Flag air carriers for U.S Government-financed international air travel and transportation of their personal effects or property, to the extent such service is available, unless travel by foreign air carrier is a matter of necessity, as defined by the Fly America Act. The Contractor shall submit, if a foreign air carrier was used, an appropriate certification or memorandum adequately explaining why service by a U.S. flag air carrier was not available or why it was necessary to use a foreign air carrier and shall, in any event, provide a certificate of compliance with the Fly America requirements. The Contractor agrees to include the requirements of this section in all subcontracts that may involve international air transportation.

OO. National Intelligent Transportation Systems Architecture and Standards

The Contractor agrees to conform, to the extent applicable, to the National Intelligent Transportation Systems (ITS) Architecture and Standards as required by section 5206(e) of TEA-21, 23 U.S.C. § 502 note, and comply with FTA Notice, "FTA National ITS Architecture Policy on Transit Projects" 66 Fed. Reg. 1455 *et seq*., January 8, 2001, and other Federal requirements that may be issued

PP. Federal Changes

Contractor shall at all times comply with all applicable FTA regulations, policies, procedures and directives, including without limitation those listed directly or by reference in the Agreement (Form FTA MA (9) dated October, 2002) between Purchaser and FTA , as they may be amended or promulgated from time to time during the term of this contract. Contractor's failure to so comply shall constitute a material breach of this contract.

QQ. Incorporation of Federal Transit Administration (FTA) Terms

The preceding provisions include, in part, certain Standard Terms and Conditions required by DOT, whether or not expressly set forth in the preceding contract provisions. All contractual provisions required by DOT, as set forth in FTA Circular 4220.1D, dated April 15, 1996, are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Agreement. The Contractor shall not perform any act, fail to perform any act, or refuse to comply with any (name of grantee) requests, which would cause (name of grantee) to be in violation of the FTA terms and conditions.

RR. Force Majeure

Neither Party shall be liable to the other Party for failure of or delay in performance of any obligation under this Agreement, directly or indirectly, owing to war, acts of terrorism, acts of God, embargoes, riots, strike and other events beyond its reasonable control, the effect of which, by the exercise of reasonable diligence, the non-performing party could not avoid. In the event that such failure or delay occurs, the affected Party shall notify the other Party of the occurrence thereof as soon as possible and the Parties shall discuss the best way to resolve the event of force majeure.

Neither party shall, however, be excused from performance if nonperformance is due to forces which are preventable, removable, or remediable and which the non-performing party could have, with the exercise of reasonable diligence, prevented, removed, or remedied with reasonable dispatch. The non-performing party shall within a reasonable time of being prevented or delayed from performance by an uncontrollable force, give written notice to the other party describing the circumstances and uncontrollable forces preventing continued performance of the obligations of this Agreement. "

SS. Governing Law

The Contract shall be interpreted under and its performance governed by the laws of the State of Rhode Island."

TT. Indemnification

Proposers shall indemnify and hold harmless, the State of Rhode Island, all departments and division thereof and the Rhode Island Public Transit Authority from all liability, and said indemnification shall cover and include any and all aspects of liability arising from any lawsuit pertaining to the execution of this contract.

UU. Policy Concerning Federal and Stated False Claim Laws

As required by 42 U.S.C. §1396a(a)(68), the Rhode Island Public Transit Authority ("RIPTA") publishes the following information to all employees, contractors and agents about federal and state False Claims laws and RIPTA's policies to detect and prevent fraud, waste and abuse.

1. Prohibitions Against False Claims
Federal False Claims Act

The federal False Claims Act, among other things, applies to the submission of claims for payment by Medicare, Medicaid and other federal and state programs. The False Claims Act is the federal government's primary civil remedy for improper or fraudulent claims. It applies to all federal programs, including welfare and health care benefits.

2. Prohibitions of the Federal False Claims Act

The False Claims Act prohibits, among other things:

a knowingly presenting or causing to be presented to the federal government a false or fraudulent claim for payment or approval;

b knowingly making or using, or causing to be made or used, a false record or statement in order to have a false or fraudulent claim paid or approved by the government;

c conspiring to defraud the government by getting a false or fraudulent claim allowed or paid; and

d knowingly making or using, or causing to be made or used, a false record or statement to conceal, avoid, or decrease an obligation to pay or transmit money or property to the government.

"Knowingly" means that a person, with respect to information: (1) has actual knowledge of the information; (2) acts in deliberate ignorance of the truth or falsity of the information; or (3) acts in reckless disregard of the truth or falsity of the information, and no proof of specific intent to defraud is required.

3. Enforcement

The United States Attorney General may bring civil actions for violations of the False Claims Act. As with most other civil actions, the government must establish its case by presenting only a preponderance of the evidence rather than by meeting the higher burden of proof that applies in criminal cases.

The False Claims Act allows private individuals to bring "qui tam" actions for violations of the Act.

VV. American with Disabilities Act

All products, equipment or construction provided in accordance with this contract shall comply with the current version of the Americans with Disabilities Act of 1990 - 42 U.S.C. 12101, et seq. at the time of the solicitation.

VI. REQUEST FOR APPROVED EQUAL FORM

This form must be submitted electronically IN MICROSOFT WORD FORMAT TO RIPTA CONTRACTS MANAGER

REQUEST FOR APPROVAL EQUAL QUALIFICATION OR CLARIFICATION

Page:_____ **Ref: RFP NO. 13-31**
Project No._____

To: Rhode Island Public Transit Authority

From: _____

Page & Reference:_____

Request Description

Use Additional Sheet If More Space Is Required

Accepted:_____ **Rejected:**_____ **See Addendum #**_____

Explanation:_____

VII. REQUIRED PROPOSAL SUBMISSIONS

The following items marked with an "X" must be submitted with Response
Failure to submit forms may result in Proposal being deemed non-responsive

Required Company Information Form **Must be completed by Prime and All Subcontractors**	X
Solicitation	X
Offer	X
Statement of Eligibility	X
Affidavit of Non-Collusion	X
Certification of Restrictions on Lobbying	X
Buy America Certificate **FORM MUST BE SUBMITTED WITH PROPOSAL, IF CHECKED, OR PROPOSAL WILL BE CONSIDERED NON RESPONSIVE**	
Disadvantaged Business Enterprise	X
General Contract Compliance Certificate Agreement (EEO)	X
Certification of Primary Participant Debarment	X
Certification of a Subcontractor (Debarment) **Each Subcontractor and potential subcontractor must fill in and sign**	X
Non-Resident Contractor (if applicable)	
Davis Bacon Act Compliance	
Drug & Alcohol Testing	
Proposal Guarantee (Surety)	

The following items marked with an "X" must be submitted AFTER AWARD of the Contract

Performance Bond	
Certificate of Insurance- (as required in Section XX and the Scope of Work)	X

NOTE:
ITEMS WITHOUT AN "X" AND THEIR RESPECTIVE TERMS AND CONDITIONS ARE NOT REQUIRED IN THIS PROPOSAL

VIII. SOLICITATION FORM

COMPANY NAME _____

PROPOSAL NO. OR PROJECT NO. 13-31

DESCRIPTION **Fare Media**

A. PROPOSAL REQUIREMENTS

Sealed proposals in original and Five copy(ies) will be received at the offices of the Rhode Island Public Transit Authority, 705 Elmwood Avenue Providence, Rhode Island 02907, at the proposal date and hour set forth on the Request for Proposal or anytime prior to the date and hour. Late proposals will not be accepted.

B. CONTRACT DOCUMENTS

By executing the offer form enclosed herewith, the proposer agrees to provide all services set forth on the specifications attached hereto upon the terms and conditions set forth in paragraphs A, B, C and D.

C. PAYMENT SCHEDULE

Payment will not be made until receipt and installation of merchandise is accepted by the Transit Authority.

D. COST FOR SERVICE

Please complete necessary cost information as outlined in the Proposal Scope of Work.

IX. OFFER FORM

Proposer understands that any condition other than stated in the specifications, clarification made to the above, or information submitted on or with this form, other than that requested, may render the proposal non-responsive.

By execution below, proposer hereby offers to furnish services in accordance with the contract documents that are a part of the specifications, and agrees to fully comply with the contract documents.

PROPOSAL NO 13-31

PROPOSER _____

EMPLOYER IDENTIFICATION NO. _____

NAME_____

ADDRESS_____

CITY/STATE/ZIP_____

TYPE OF BUSINESS ENTITY: (Please check one)

Sole Proprietor _____
Partnership _____
Corporation _____

PROPOSER'S CONTRACTING OFFICER

_____
Name *(Please Print)*

_____
Authorized Signature

_____
Title

X. STATEMENT OF ELIGIBILITY FORM

The _____hereby certifies that he/she
(Name of Proposer)
is/is not (underscore one) included on the Comptroller General's Lists of Persons or Firms Currently Barred for Violations of Various Public Contracts Incorporating Labor Standards Provisions.

_____
Name of Firm

_____
Address

_____
City, State, Zip

_____
Signature of Authorized Person

_____
Date Authorized

XI. AFFIDAVIT OF NON-COLLUSION FORM

I hereby swear (or affirm) under penalty for perjury:

1. that I am the Proposer (if the proposer is an individual), a partner of the Proposer (if the proposer is partnership), or an officer or employee of the proposing corporation having authority to sign on its behalf (if the Proposer is a corporation).

2. that the attached proposal has been arrived at by the Proposer independently, and has been submitted without collusion with, and without agreement, understanding, or planned common course of action with, any other vendor of materials, supplies, equipment, services described in Invitation for Proposals, designed to limit independent bidding or competition.

3. that the contents of the proposal has not been communicated by the Proposer or its employees or agents, to any person not an employee or agent of the Proposer or its surety on any bond furnished with the proposal, and will not be communicated to any such person prior to the official opening of the proposal; and

4. that I have fully informed myself regarding the accuracy of the statement made on this affidavit.

_____
Name

_____
Address

_____
City, State, Zip

_____
Signature of Authorized Official

_____
Date Authorized

Subscribed and sworn before me this _____ day of _____,20____

Notary Public

My commission expires _____

XII. CERTIFICATION OF RESTRICTIONS ON LOBBYING FORM

I,_____, hereby certify on
(Name/title of Proposer Authorized Official)

behalf of: _____that:
(Name of Proposer)

1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, grant, loan, or cooperative agreement.

2) If any funds other than Federal appropriated funds have been paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, or an employee of a member of Congress in connection with this Federal contract, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying", in accordance with its instructions.

3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclosure accordingly.

This certification is a material representation of fact upon which reliance is placed when this transaction was made or entered into. Submission of the certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

Executed this _____ day of _____, 20_____.

By _____
(Signature of Authorized Official)

XIII. BUY AMERICA CERTIFICATION REQUIREMENTS I FOR PROCUREMENT OF STEEL OR MANUFACTURED PRODUCTS

49 U.S.C. 5323(j) and 49 CFR 661 provide that no Federal funds may not be obligated for mass transportation projects unless steel and manufactured products used in these projects are produced in the United States.

If steel or manufactured products are being procured, the appropriate certificate as set forth below shall be completed and submitted by each proposer.

Certificate of Compliance-The Proposer hereby certifies that it will comply with the requirements of 49 U.S.C. 5323 (j)(1) and the Applicable regulations on 49 CFR Part 661.

COMPANY NAME _____

SIGNATURE _____

TITLE _____

DATE _____

Certification of Non-Compliance-The Proposer hereby certifies that it cannot comply with the requirements of 49 U.S.C. 5323 (j)(1).

COMPANY NAME _____

SIGNATURE _____

TITLE _____

DATE _____

FORM MUST BE SIGNED AND SUBMITTED WITH PROPOSAL OR PROPOSAL WILL BE CONSIDERED TO BE NON-RESPONSIVE.

XIV. BUY AMERICA CERTIFICATION REQUIREMENTS II OF PROCUREMENT OF BUSES, OTHER ROLLING STOCK AND ASSOCIATED EQUIPMENT

49 U.S.C. 5323 (j) and 49 CFR 661 provide that no Federal funds be obligated for procurement of buses, other rolling stock and associated equipment unless the following conditions are met:

1. The cost of components which are produced in the United States is more that 60 per centum (60%) of the cost of all components of the vehicle or equipment described in this paragraph; and
2. Final assembly of the vehicle or equipment described in this paragraph has taken place in the United States.

If buses or other rolling stock (including train control, communication and traction power equipment) are being procured, the appropriate certificate as set forth below shall be completed and submitted by each proposer in accordance with the requirements.

Certificate of Compliance-The proposer hereby certifies that it **will comply** with the requirements of the 49 U.S.C. 5323 (j)(2)(c) and CFR Part 661.

COMPANY NAME _____

SIGNATURE _____

TITLE _____

DATE _____

Certificate of non-Compliance-The proposer hereby certifies that it **cannot comply** with the requirements of the Surface Transportation Assistance Act of 1982, as amended, but may qualify for an exception to the requirements.

COMPANY NAME _____

SIGNATURE _____

TITLE _____

DATE _____

FORM MUST BE SIGNED AND SUBMITTED WITH PROPOSAL OR PROPOSAL WILL BE CONSIDERED TO BE NON-RESPONSIVE.

XV. BUY AMERICA PRE-AWARD AND POST-DELIVERY AUDITS:

A. Prior to Contract award,

The apparent successful offeror shall provide to the Authority's auditors the cost of the components and subcomponents to be used in the manufacturing of the rolling stock, their country of origin, the location of final assembly, the activities that will take place at the location and pertinent supporting documentation for the purpose of RIPTA performing the cited Pre-Award Audit of Buy-America requirements.

B. After delivery and acceptance of the vehicles,

The Contractor shall provide to the Authority's auditors the cost of the components and subcomponents used in the manufacture of the rolling stock, their country of origin, the location of final assembly, the activities that took place at the location and pertinent supporting documentation to enable RIPTA to perform the cited Post-Delivery Audit of Buy America Requirements.

C. Authority Review

The contractor shall facilitate the reviews by the Authority's auditors by providing the supporting documentation for the above information in a timely fashion.

XVI. DISADVANTAGED BUSINESS ENTERPRISES PROGRAM

Proposers are strongly encouraged to have Disadvantage Business Enterprise Participation/Small Business, regardless of the DBE Goal in this Proposal.

Disadvantaged Business Enterprise (DBE) Special Provisions

A firm's DBE Participation and/or demonstration of a "Good Faith Effort" will be considered when reviewing submittals for responsiveness. This will be considered when evaluating Proposal Responses

A. Policy

1. It is the policy of Department of Transportation (DOT) that the DBE requirements in 49 CFR Part 26, as amended, shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with Federal funds under this agreement. Consequently, the DBE requirements of 49 CFR Part 26, as amended apply to this agreement.
2. DBE Obligation – RIPTA or its contractor agrees to ensure that DBE's as designed in 49 CFR Part 26, as amended, have the maximum opportunity to participate in the performance of contracts and subcontracts financed in whole or in part with Federal funds provided under this agreement. In this regard, RIPTA or its contractors shall take all necessary and reasonable steps in accordance with 49 CFR Part 26, as amended, to ensure that DBE's have the maximum opportunity to compete for and perform contracts. RIPTA and its contractors shall not discriminate on the basis of race, color, religion, national origin, age or sex in the award and performance of DOT assisted contracts.
3 Contractor Obligation – Contractors and subcontractors failing to carry out the requirement set forth in 1 and 2 above, shall constitute a breach of contract and, after the notification to the Department (DOT), may result in termination of the agreement or contract by RIPTA or such remedy as RIPTA deems appropriate.

B. DBE Utilization

1. DBE Utilization

The Contractor agrees to provide for full and fair utilization of Disadvantaged Business Enterprises (DBEs) by complying with the requirements of this clause. Included in these requirements is the achievement of the stated goal for the utilization of DBEs in the performance of work under this contract. Nothing in this clause shall be construed to require the utilization of any DBEs, which is either not qualified or unavailable. . ***All DBEs submitted must be certified by the State of Rhode Island at the time of proposal submittal. A copy of the DBE Certification Letter from the State of Rhode Island Office of Civil Rights must accompany the proposal submittal***

2. Utilization Goal

For the purpose of this contract, the goal for utilization of DBEs shall be as follows: Not Applicable DBE percent of the Contract Dollar Amount.

C. Definitions.

The terms used in these special provisions shall be defined as follows:

1. Joint Venture

an association of two or more persons to carry out a single business enterprise for profit, for which purpose they combine their property, money, efforts, skills and knowledge.

2. Disadvantaged Business

means a small business concern in which is, at least, 51 percent owned by one or more socially and economically disadvantaged individuals, or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more socially and economically, disadvantaged individuals who own it.

3. Small Business Concern

a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto.

4. Socially and Economically Disadvantaged Individuals

means those individuals who are citizens of the United Stated (or lawfully admitted permanent residents) and who are women, Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, or Asian-Indian Americans and any other minorities of individuals found to be disadvantaged by the Small Business Administration pursuant to Section 8 (a) of the Small Business Act, RIPTA shall make a rebuttal presumption the individuals in the following groups are socially and economically disadvantaged. RIPTA may also determine, on a case-by-case basis, that individuals who are not a member of one of the following groups are socially and economically disadvantaged:

a. **Black Americans**, which includes persons having origins in any of the Black racial groups of Africa;
b. **Hispanic Americans**, which includes persons of Mexican, Puerto Rican, Cuban, Central or South America, or other Spanish culture or Portuguese culture, regardless of race;
c. **Native Americans**, which includes persons who are American Indian, Eskimo, Aleuts,or Native Hawaiians;
d. **Asian-Pacific Americans**, which includes persons whose origins are Japan, China, Taiwan, Korea, Vietnam, Laos, Cambodia, the Philippines, Samoa, Guam, the U.S. Trust Territories of the Pacific, and the Northern Marianas; and
e. **Asian-Indian Americ**ans, which includes persons whose origins are from India, Pakistan, and Bangladesh.
f. **Disadvantaged Business Enterprise (DBE) Liaison Officer** – the individual designated by the Authority to monitor compliance with these Special Provisions and to assist in their implementation.
g. **Proposer** – any individual, partnership, joint venture, corporation or firm submitting a proposal for the contract.

5. Recognition of DBE Commitment

Each proposer shall recognize RIPTA's commitment to insure that DBE's be afforded full opportunity to participate in contracts awarded by RIPTA and will not be discriminated against on the grounds of race, religion, color, national origin, handicap, age or sex.

6. Submissions

all proposers shall submit the following information with the proposal by using the Schedule of DBE Participation (Attachment A);

1. The Name and address of each DBE firm that will participate in the contract;
2. A description of the work each named DBE firm will perform; and
3. The dollar amount of participation by each named DBE firm.

The Authority encourages firms located in the United States that are currently certified as DBEs and SBAs by Federal, State and Local agencies to apply for certification in the State of Rhode Island.

If a minority business would like to be certified by the State of Rhode Island contact: Mr. Charles Newton, Department of Administration, 1 Capital Hill, Providence, Rhode Island, 02908, Telephone (401) 222-6253.

If the apparent successful competitor's submissions does not satisfy the goal, RIPTA shall determine whether the apparent successful competitor has made good faith efforts to obtain DBE participation in accordance with the guidelines stated in Paragraph F, Sub-paragraph 1, below.

Unsuccessful efforts in gaining DBE participation must be documented on the "DBE Unavailability Certification" attached hereto as Attachment D. Meeting the DBE contract goals or making good faith efforts to meet the goals is a condition of receiving a Federal Transit Administration assisted contract for which contract goals have been established by RIPTA.

The legitimacy of each DBE or disadvantaged-majority joint venture shall be determined by RIPTA, based on the information submitted in the affidavits attached hereto as Attachments C and D. RIPTA will require all prime contractors to make good faith efforts to replace a DBE subcontractor that is unable to perform successfully with another DBE. RIPTA shall approve all substitutions of subcontractors **before** award of contract and **during** contract performance, in order that substitute firms are eligible DBE's.

7. Procedure Prior to Contact Award

a. Guidance Concerning Good Faith Efforts to Meet DBE Contract Goals.

RIPTA may decide that a competitor that has failed to meet DBE contract goals may receive the contract upon determining that the efforts the competitor made to obtain DBE participation were "good faith efforts" to meet the goal. RIPTA shall not consider efforts that are merely pro forma to be good faith efforts to meet the goals, even if they are sincerely motivated, if, given all relevant circumstances, they could not reasonably be expected to produce a level of DBE participation sufficient to meet the goals. In order to award a contract to a competitor that has failed to meet DBE contract goals, RIPTA must determine that the competitor's efforts were those that, given all relevant circumstances, a competitor, actively and aggressively seeking to meet the goals would make.

Following is a list of the kinds of efforts RIPTA may consider. The list is not exclusive or exhaustive and in appropriate cases RIPTA shall consider other relevant factors or types of efforts. RIPTA shall consider not only the different kinds of efforts the contractor has made, but also the quantity and intensity of those efforts. All information must be in writing and copies of all ads, written notices, follow-up letters and/or all other correspondence must be presented whenever a waiver is asked for.

RIPTA will consider the following efforts:

i. whether the contractor attended any pre-solicitation or pre-proposal meetings that were scheduled by RIPTA to inform DBEs of contracting opportunities;
ii. whether the contractor advertised in general circulation, trade association, and disadvantaged focus media concerning the sub-contracting opportunities;
iii. whether the contractor provided written notice to a reasonable number of specific DBEs that their interest in the contract was being solicited in sufficient time to allow the DBEs to participate effectively;
iv. whether the contractor followed up initial solicitation of interest by contracting DBEs to determine with certainty whether the DBEs were interested;
v. whether the contractor selected portions of the work to be performed by DBEs in order to increase the likelihood of meeting the DBE goals including, where appropriate, breaking down contracts into economically feasible units to facilitate DBE participation;
vi. whether the contractor provided interested DBEs with adequate information about the plans, specifications and requirements of the contract;

vii. whether the contractor negotiated in good faith with interested DBEs, not rejecting DBEs as unqualified without sound reasons based on a thorough investigation of their capabilities;

viii. whether the contractor made efforts to assist interested DBEs in obtaining bonding lines of credit, or insurance required by RIPTA or contractor; and

ix. whether the contractor effectively used the services of available disadvantaged community organizations, disadvantaged contractor's groups, Local, State and Federal disadvantaged business assistance offices, and other organizations that provide assistance in the recruitment and place of DBEs.

8. Proposal, Execution & Compliance with Subcontracts

Prior to the execution of a contract between RIPTA and the successful proposer, the proposer shall present, for RIPTA's approval, DBE subcontracts corresponding in all respects to the proposed agreements. Upon approval by RIPTA, the successful proposer shall enter into each such approved DBE sub-contract and shall thereafter neither terminate such DBE nor reduce the scope of the work to be performed by, or decrease the price to be paid to, the DBE and the disadvantaged non-disadvantaged joint venture thereunder without in each instance the prior written approval of RIPTA.

9. Substitution of Subcontractors

RIPTA shall review for its approval all substitutions of subcontractors in order to determine if the percentage goal will be decreased by substitution of a disadvantaged contract/supplier with a non-disadvantaged contractor/supplier.

Where RIPTA has approved termination of a sub-contract held by an DBE or disadvantaged non-disadvantaged joint venture, the successful proposer shall make every reasonable effort to propose and enter into an alternative sub-contract or subcontracts for the same work to be performed by another qualified DBE for a contract price or prices totaling not less than the contract price of the terminated sub-contract. Satisfactory evidence of reasonable efforts shall be timely furnished by RIPTA.

10. Program Compliance

At all times, discrimination on the basis of race, color, religion, national origin, handicap, age or sex will not be tolerated. RIPTA will monitor the schedule for participation by disadvantaged contractors in an effort to isolate those prime contractors who do not adhere to the non-discriminatory policies of RIPTA. If such contractor fails to respond to counseling with respect to the disposition of subcontracts pertaining to RIPTA funds, RIPTA reserves the right to terminate the contract and to consider future proposals of such contractor to be non-responsive in the absence of written assurance from it of the full opportunity for DBEs to participate in its awards of subcontracts, together with the follow-up to verify such participation.

11. Maintenance of Records

All records relating to the contract shall be maintained by the contractor for a period of three (3) years after project completion.

12. Contract Assurance

The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of the contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT assisted contracts. Failure by the contractor to carry out these requirements is a material breach of contract, which may result in the termination of this contract or such other remedy, as the recipient deems appropriate.

13. Prompt Payment

The prime contractor agrees to pay each subcontractor under this prime contract for satisfactory performance of its contract no later than 30 days from the receipt of each payment the prime contractor receives from the Rhode Island Public Transit Authority. The prime contractor agrees further to return retainage payments to each subcontractor within 30 days after the subcontractor's work is satisfactorily completed. Any delay or postponement of payment from the above reference time frame may occur only for good cause following written approval of the Rhode Island Public Transit Authority. This clause applies to both DBE and non-DBE subcontractors. RIPTA reserves the right to hold payments to the Contractor if payments verification logs are not submitted within 30 days of payments. Failure to submit payments to DBE subcontractors within 30 days will result in action by RIPTA up to and including disqualification from any future RIPTA Procurements.

14. Monitoring Payments to DBEs

RIPTA requires that prime contractors to maintain records and documents of payments to DBEs following the completion of the contract. These records will be made available for inspection upon request by any authorized representative of RIPTA or United States Department of Transportation. This requirement also extends to any DBE Subcontractor. Reports of payments to DBE Subcontractors shall be provided to the RIPTA DBE Liaison Officer on a monthly basis. Failure to submit these reports on a timely basis may result in delay of payments.

XVII. DISADVANTAGED BUSINESS ENTERPRISE REQUIRED FORMS

Attachment A: Schedule of DBE Participation
Submitted if DBE firm or firms will be participating in the Proposal.

Attachment B: DBE Application Agreement
Submitted if DBE firm or firms will be participating in the Proposal.

Attachment C: Letter of Intent to Perform as a Subcontractor
Submitted if DBE firm or firms will be participating in the Proposal

Attachment D: DBE Unavailability Summary Sheet
Submitted if DBE firm or firms you have contacted cannot participate. This form is used to document good faith effort. This form only needs to be completed when there is a DBE Participation Goal.

Attachment E: Narrative Explanation for Lack of DBE Participation
Submitted by the Prime Contractor to explain lack of DBE/SBA participation.

Attachment F: Documentation of DBE Utilization
To be filled in by the DBE firm and the prime contractor once the DBE Subcontractor has been paid.
Please Note: Final payment to the Prime Contractor will be held until this form or forms are received for each DBE Subcontractor.

DBE FIRMS PROPOSING AS A PRIME CONTRACTOR: the following forms must be filled in, signed and submitted with the Proposal

Attachment A, Attachment B
Please state, on these forms, that you are proposing as a prime contractor.

CERTIFICATION LETTER OR NOTIFICATION MUST BE INCLUDED FOR EACH DBE FROM THE STATE OF RHODE ISLAND.

Please record by letter (using the list below) under the DBE Category Column found on Attachment A: Schedule of DBE Participation Form on the following page

a. "Black Americans", which includes persons having origins in any of the Black racial groups of Africa;
b. "Hispanic Americans", which includes persons of Mexicans, Puerto Rican, Cuban, Central or South America, or other Spanish culture or Portuguese or origin, regardless of race;
c. "Native Americans", which include persons who are American Indian, Eskimos, Aleuts, or Native Hawaiians:
d. "Asia-Pacific Americans", which includes persons whose origins are from Japan, China, Taiwan, Korea, Vietnam, Laos, Cambodia, the Philippines, Samoa, Guam, the U.S. Trust Territories of the Pacific, and the Northern Marianas;
e. "Asian-Indian Americans", which includes persons whose origins are from India, Pakistan, and Bangladesh; and
f. any other minorities or individuals found to be disadvantaged by the Small Business Administration pursuant to Section 8 (a) of the Small Business Act.

SCHEDULE OF DBE PARTICIPATION

A. Attachment A

Company Name: _____

Project Number: 13-31 **Project:** Fare Media

*Please provide copy of DBE Certification Letter for each DBE firm listed from the Rhode Island Office of Civil Rights. **DBE Vendors must be certified in the State of Rhode Island at the time of Proposal Submittal to be considered. A full, up to date list of Rhode Island DBEs can be obtained at the following website: www.mbe.ri.gov/**

DBE Firm Name	DBE Firm Address	DBE Category	Phone Number	Contact Name	Work to be Performed	Estimated Value Dollars	Estimated Value Percent of Proposal

The undersigned will enter into a formal agreement with Disadvantaged Business Enterprise firms for work listed in this schedule conditioned upon execution of a contract with the Rhode Island Public Transit Authority.

Authorized Signature of Proposer Official_____

Each DBE Firm listed in the Section must also complete the Required Company Information Form and the Certification of Subcontractor Form (Page 74)*Use additional forms as needed.

DBE APPLICATION AGREEMENT

B. Attachment B

Project Number: **13-31**

Project Name: **Fare Media**

With respect to the above numbered project, I hereby certify that I am the _____ and duly authorized representative of _____
(Title) (Firm)
Address is _____, _____, _____
(Street) (State) (Zip Code)

I do hereby certify that it is the intention of the above organization to affirmatively seek out and consider Disadvantaged Business Enterprises to participate in this contract as contractors, Subcontractors and/or suppliers of requirements of the U.S. Department of Transportation's regulation 49 CFR Part 26.

I understand and agree that any and all contracting in connection with this contract, whether undertaken prior to or subsequently to award of contract, will be in accordance with this provision.

The utilization of Disadvantaged Business Enterprise is in addition to all other equal opportunity requirements of this contract.

_____
Authorized Signature

_____
Title

LETTER OF INTENT TO PERFORM AS A SUBCONTRACTOR

C. Attachment C

To: _____
(Name of Prime or General Proposer)

The undersigned intends to perform work in connection with the above project as (check one):

___ an individual ___ a corporation

___ a partnership ___ a joint venture

The undersigned is prepared to perform the following described work in connection with the above project (specify in detail particular work items or parts thereof to be performed).

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

for the following compensation: _____

_____
(Name of DBE Contractor)

DBE GOOD FAITH EFFORT SUMMARY SHEET

D. Attachment D

RIPTA requires a listing of DBE firms contacted; but not able to perform work. Use additional pages as needed. The DBE Goal for this project is Not Applicable percent. **. A full, up to date list of Rhode Island DBEs can be obtained at the following website: www.mbe.ri.gov/**

DBE Firm Name	DBE Firm Address	DBE Category	Phone Number Email Address	Contact Name	Reason Unable to Perform Work

Project Name: Fare Media **Project Number: 13-31**

Form completed by: _____ Date: _____

NARRATIVE EXPLANATION FOR LACK OF DBE PARTICIPATION
E. Attachment E

Company Name: _____

Project Number: **13-31**

Project Name: **Fare Media**

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

_____
(Authorized Signature of Prime Contractor)

TO BE FILLED IN BY THE PRIME CONTRACTOR TO EXPLAIN LACK OF DBE PARTICIPATION.

DOCUMENTATION OF DBE UTILIZATION

F. Attachment F

RIPTA Contract Number: 13-31

Prime Contractor: _____

DBE Name: _____

Starting Date: _____ **Completion Date:** _____

This is to verify the following:

- I was the approved DBE on the above contract.
- I performed the items of work Subcontracted.
- I actually received $_____ for my work.
- I received payment of retainage on _____
  (date)

_____ _____
(Signature & Title of DBE) (Date)

_____ _____
(Signature & Title of Prime Contractor) (Date)

This form is to be filled in by the DBE firm and the prime contractor once the DBE Subcontractor has been paid.

Retainage payments will be made to each subcontractor within 30 days after the subcontractor's work is satisfactorily completed

Please Note: Final payment to the Prime Contractor will be held until this form or forms are received for each DBE Subcontractor.

XVIII. PERFORMANCE BOND INFORMATION

The selected Proposer shall furnish, within twenty (20) calendar days (if required) after the date of notice of award of contract by RIPTA, a Performance and Payment Bond in the amount of 100% of the proposal amount covering the faithful performance of the contract.

The Performance Bond is to be secured through an insurance company or companies which is licensed in the State of Rhode Island or which is approved by the Authority.

The Bond will remain in effect throughout the warranty period.

XIX. PROPOSAL GUARANTEE (SURETY)

A Proposal Guarantee (if required) shall be submitted with the proposal response. This guarantee shall be equivalent to five (5) percent of the proposal price. The "proposal guaranty shall consist of a firm commitment such a bid bond, certified check, or other negotiable instrument accompanying a proposal as assurance that the proposer will, upon will, upon acceptance of its proposer, execute such contractual documents as may be required within twenty (20) calendar days after the date of notice of award of contract by RIPTA.

XX. REQUIRED INSURANCE

The Bidder will be required to secure and maintain the following insurance coverages:

A. Minimum limits

1. Commercial comprehensive general liability insurance, with limits of $3,000,000.00 per accident and $5,000,000.00 aggregate.
1. Workers' Compensation Coverage in accordance with RI Statutory requirements.
2. The Rhode Island Public Transit Authority shall be named as additional insured under said policies.
3. Automotive Liability Insurance
   - $1,000,000.00 per accident and $3,000,000.00 aggregate: bodily injury.
   - $1,000,000.00 property damage
   -

B. Certificate Requirements

1. Each bidder must provide RIPTA a Certificate of Insurance upon award of the contract. Coverage indicated on certificate must be kept in effect at all times during the contract period
1. The General Liability Coverage shall include Contractual Liability and Completed Operations Coverages. The

General Liability coverage, certificates must name: RIPTA and its respective directors, officers, employees, and affiliates as additional insureds. Reference should be made to project or job number and location.

2. A Waiver of Subrogation in favor of RIPTA must apply to the General Liability, Employers Liability, and Excess Liability / Umbrella policies.
3. Automobile Liability must cover any owed, rented, hired or borrowed vehicles.
4. The Excess or Umbrella coverage must provide the required
   Liability limit over the General Liability, Automobile Liability, Employers Liability s, Professional Liability and Environmental
   Liability policies (if required).
5. If bidder is to use any subcontractor during the course of the project, the subcontractor must maintain the same limits and terms as the bidder. Certificates of Insurance for subcontractors must be provided to RIPTA with the Bidder's Submittal after award of the Contract.
6. All certificates of insurance must indicate the carrier policy cancellation terms.
7. All bidders must utilize insurance companies with a "Best" Rating of no less than A-, Size VIII.

C. Special Coverages

1 Contractor must maintain Environmental Pollution coverage with limits no less than $1,000,000 if contractors work includes the transport, delivery, storage, handling or disposal of any pollutants or other hazardous materials. This insurance is also required for all contracts involving any work on RIPTA's storage tanks, and fluid distribution systems

2 Installation Floater Insurance is required for all construction projects equal to the value of the project.

3 Professional Liability/Errors and Omission coverage shall be included in all Professional Services Contracts

Bidder shall provide to RIPTA Contracts Manager a Certificate of Insurance upon award of contract. This Certificate shall be kept in effect at all times. Current copies shall be provided to the Contracts Manager

XXI. GENERAL CONTRACT COMPLIANCE CERTIFICATE AND AGREEMENT

RHODE ISLAND STATE EQUAL OPPORTUNITY OFFICE

The undersigned Contractor agrees and certifies, unless otherwise exempt, that it is in compliance with the applicable requirements of Federal Executive order No. 11246, as amended, Rhode Island General Law 28-5.1-10, and other regulations as issued by the Rhode Island Public Transit Authority, as set forth below, or will take steps to comply with such requirements prior to acceptance of any order from us. This agreement and certificate shall form a part of, and be deemed incorporated in, each order submitted to you for supplies or services exceeding $10,000. Failure to comply will be considered a substantial breach of the contract.

A. Equal Opportunity Clause

During the performance of this contract, the Contractor agrees as follows:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or natural origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of the non-discrimination clause.
2. The Contractor will, in all solicitations or advertisements for placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
3. The Contractor will send to each labor union or representative of workers with which he/she has collective bargaining agreement or other contract or understanding a notice, advising the labor union or worker's representative of the Contractor's commitments under Section 202 of Federal Executive order No. 11246, as amended, Rhode Island Law 28-5.1-10, and other regulations and relevant orders of the Secretary of Labor.
4. The Contractor will comply with all provisions of Federal Executive Order No. 11246, as amended, Rhode Island General Law 28-5.1-10, and other regulations and relevant orders of the Secretary of Labor.
5. The Contractor will furnish all information and reports required by Executive Order No. 11246, as amended, Rhode Island General Law 28-5.1-10 and other regulations as issued by the State of Rhode Island, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his/her books, records and accounts by the State Equal

Opportunity Office and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations and orders.

6. In the event of the Contractor's non-compliance with the non-compliance with the non-discrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be cancelled, terminated or suspended in whole or part, and the Contractor may be declared ineligible for further State contracts in accordance with procedures authorized in Federal Executive Order No. 11246, as amended, Rhode Island General Law 28-5.1-10 , and other regulations as issued by the State of Rhode Island, and such other sanctions may be imposed and remedies invoked as provided in Federal Executive Order No. 11246, as amended; Rhode Island Public Transit Authority, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law, or the State of Rhode Island and Providence Plantations.
7. The Contractor will include the provisions of paragraphs (1) through (7) in every sub-contract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Federal Executive Order No. 11246, as amended, Rhode Island General Law 28-5.1-10, and other regulations as issued by the Rhode Island Public Transit Authority, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any sub-contract of purchase order as the contracting agency may direct as a means of enforcing such provisions including sanctions for non-compliance; provided, however, that in the event the Contractor becomes involved in, or is threatened with litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the Contractor may request the United States and the State of Rhode Island to enter into such litigation to protect the interest of the United States and the State of Rhode Island.

B. Age Discrimination

Pursuant to Federal Executive Order No. 11246, as amended, the Contractor will not, in connection with the employment, advancement or discharge of employees, or in connection with the terms, conditions, or privileges of their employment, discriminate against persons because of their age except upon the basis of a bona fide occupational qualification, retirement plan or statutory requirement, nor will the Contractor specify, in solicitations or advertisements for employees, a maximum age limit for employment unless the specified maximum age limit is based upon a bona fide occupational qualification, retirement plan or statutory requirement.

C. Employment of the Handicapped

1. Contractor will not discriminate against any employee or applicant for employment because of physical or mental handicap in regard to any position for which the employee or applicant for employment is qualified. Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat

qualified handicapped individuals without discrimination based upon their physical or mental handicap in all employment practices such at the following employment, upgrading, demotion or transfer, recruitment or recruitment advertising; layoff or termination, rates of selection for training, including apprenticeship.

2. Contractor agrees that if a handicapped individual files a complaint with him/her that he/she is not complying with the requirements of the Rehabilitation Act of 1973, he/she will (1) investigate the complaint and take appropriate action consistent with requirements of 41 CFR Part 60-741.29 and (2) maintain on file for three years, the record regarding the complaint and the actions taken.
3. Contractor agrees that if a handicapped individual files a complaint with the Department of Labor that he/she has not complied with the requirements of the act, (1) he/she will cooperate with the Department in its investigation of the complaint, and (2) he/she will provide all pertinent information regarding his/her employment practices with respect to the handicapped.
4. Contractor agrees to comply with the rules and regulations of Section 503 of the Rehabilitation Act of 1973 as interpreted in 41 CFR Part 60-741.29.
5. in the event of Contractor's noncompliance with the requirements of this clause contract may be terminated or suspended in whole or in part.
6. This clause shall be included in all subcontracts. In the event that this contract exceeds $10,000 but is less than $500,000 and provides for performance in 90 days or more, Contractor further agrees as follows:
7. Contractor agrees (1) to establish an affirmative action program, appropriate procedures consistent with the guidelines and the rules of the Secretary of Labor, will provide the affirmative action regarding employment and advancement of the handicapped required by P.L. 93-516, (2) to publish the program in the employees or personnel handbook or otherwise distribute a copy to all personnel, (3) to review the program each year and to make such changes as may be appropriate, and (4) to designate one of the principal officials to be responsible for the establishment and operation of the program.
8. Contractor agrees to permit the examination by appropriate contracting agency officials or the Assistant Secretary for Employment Standards or the designee, of pertinent books, documents, papers and records concerning employment and advancement of the handicapped.
9. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the Assistant Secretary for Employment Standards, provided by the contracting officer, stating Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified handicapped employees and applicants for employment and the rights and remedies available.

10. Contractor will notify each labor union or representative of workers with which he/she has a collective bargaining agreement or other contract understanding, that he/she is bound by the terms of Section 503 of the Rehabilitation Act, and is committed to take affirmative action to employ and advance in employment, physically and mentally handicapped individuals.
In the event this contract exceeds $100,000 and provides for performance in 90 days or more, Contractor further agrees as follows:
11. Contractor agrees to submit a copy of his/her affirmative action program to the State Equal Opportunity Office within 30 days after the award of a contract or sub-contract.
12. Contractor agrees to submit a summary report to the State of Rhode Island and Providence Plantations Equal Opportunity Office by March 31 of each year during performance of the contract and by March 31 of the year following completion of the contract, in the form prescribed by State Equal Opportunity Office covering employment and complaint experience accommodations made and all steps taken to effectuate and carry out the commitments set forth in the affirmative action program.

XXII. CERTIFICATE OF NON-SEGREGATED FACILITIES

Contractor certifies that he/she does not maintain or provide for his/her Employees any segregated facilities at any of his/her establishments, and that he/she does not permit his/her employees to perform their services at any such location, under his/her control, where segregated facilities are maintained. He/she certifies further that he/she will not permit his/her employees to perform their services at any location, under his/her control, where segregated facilities are maintained. Contractor agrees that a breach of this certification is a violation of the Equal Opportunity Clause in this contract. As used in this certification, the term “Segregated Facilities” means any waiting room, work areas, rest rooms, and wash rooms, restaurants and other eating areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are, in fact, segregated on the basis of race, creed, color, or national origin, because of habit, local custom, or otherwise. He/she further agrees that (except where he/she has obtained identical certifications from proposed subcontractors for specific time periods), he/she will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding $10,000, which are not exempt from the provisions of the Equal Opportunity Clause; that he/she will forward the following notice to proposed subcontractors (except where the proposed subcontractors have submitted identical certifications for specific time periods).

XXIII. NOTICE OF PROSPECTIVE SUBCONTRACTORS OF REQUIREMENT FOR CERTIFICATION OF NONSEGREGATED FACILITIES

A Certificate of Nonsegregated Facilities must be submitted prior to the award of a sub-contract exceeding $10,000 which is not exempt from the provisions of the Equal Opportunity Clause. The certification may be submitted either for each sub-contract or for all subcontracts during a period (i.e. quarterly, semi-annually, or annually).

NOTE: The penalty for making false statements in offers is prescribed in 18 USA 1001.

A. Affirmative Action Compliance Program

Contractor agrees to develop a written Affirmative Action Compliance Program for each of its establishments as required by Section 60-1.40 of Title 41 of the Code of Federal Regulations.

B. Employer's Information Report (EE)-1) Form 100

Contractor agrees to file in duplicate, Standard Form 100, entitled, **"Equal Employment Opportunity Employer Information Report EEO-1"** as required by Section 60-1.7 of Title 41 of the Code of Federal Regulations.

Send original copy to Federal authorities, duplicate copy to the State Equal Opportunity Office, 1 Capitol Hill, Providence, Rhode Island 02908-5865.

C. Notice to All Vendors

If it should be determined by the State Equal Opportunity Office that any company doing business with the State is guilty of non-compliance with the provisions of this document, said company will be given two (2) written warnings. If the said company does not comply immediately after the second written notice, then the State Equal Opportunity Office will notify the Rhode Island Public Transit Authority, who shall have the authority to have the contract **revoked** and all contractual obligations of the State dealing with the contract in question will be **null** and **void.**

D. Post Award Conference

Post Award Conference for the Implementation of Affirmative Action prior to Signing of Contract.

C. Signature Required

Failure to provide a signature prior to Award to successful Proposer shall be cause for Rejection of proposal.

XXIV. GENERAL CONTRACT COMPLIANCE CERTIFICATE & AGREEMENT FORM

(Equal Employment Opportunity)

Authorized Signature: _____

Print Name: _____

Title: _____

Company Name: _____

Date: _____

Indicate Job Location Address: _____

PROPOSAL NO. 13-31

XXV. DAVIS BACON ACT COMPLIANCE

I certify that I will comply with the Provisions of the Davis-Bacon Act for this project. I certify that I will pay the applicable Prevailing Wages as listed at the following web address:
http://www.access.gpo.gov/davisbacon/ri.html

Authorized Signature: _____

Print Name: _____

Title: _____

Company Name: _____

Date: _____

Indicate Job Location Address: _____

XXVI. CERTIFICATION OF PRIMARY PARTICIPANT FORM

Request for Proposal Number: 13-31
Project Fare Media

The primary participant _____, certifies to the best of its knowledge and belief, that it and its principals:

1) Are not presently debarred, suspended, proposed for debarment, declared eligible, or voluntarily excluded from covered transactions by any Federal Department or Agency;
2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or Local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction or records, making false statements, or receiving stolen property;
3) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or Local) with commission of any of the offenses enumerated in paragraph (2) of this certification; and
4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or Local) terminated for cause or default.
5) The Primary Participant also certifies that, if it later becomes aware of any information contradicting the statements of Paragraphs 1-4 above, it will promptly notify RIPTA.

The primary participant _____, certifies or affirms the truthfulness and accuracy of the contents of the statements submitted on or with this certification and understands that the provisions of 31 U.S.C Sections 3801 **ET SEQ**. are applicable thereto.

_____ _____
Signature/Title of Authorized Official Date

XXVII. DEBARMENT CERTIFICATION

CERTIFICATION REQUIREMENTS FOR RECIPIENTS OF GRANTS AND COOPERATIVE AGREEMENTS REGARDING DEBARMENT AND SUSPENSIONS

The purpose of the attached certifications is to exclude entities and individuals that the Federal Government has either debarred or suspended from obtaining Federal assistance funds through grants, cooperative agreements or third party contracts.

To assure that such entities and individuals are not involved in projects financed with Federal Transit Administration (FTA) assistance, FTA requires its applicants to complete the certificates.

The primary participant must sign the "**Certification of Primary Participant**" and, if there is a subcontractor, they must sign **the "Certification of a Subcontractor"** (If there is more than one subcontractor, they must all sign one of these forms.).

XXVIII. CERTIFICATION OF A SUBCONTRACTOR FORM

Request for Proposal Number: 13-31

Project **Fare Media**

The potential Subcontractor, _____
Certifies, by submission of this certification, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal Department or agency.

The Subcontractor, _____ certifies or affirms the truthfulness and accuracy of the contents of the statements submitted on or with this certification and understands that the provisions of 31 U.S.C. Sections 3801 **ET SEQ**. are applicable thereto.

_____
Signature/Title of Authorized Official

_____ _____
Print Signature Date

XXIX. NON-RESIDENT CONTRACTOR INFORMATION

From: Department of Administration
Division of Taxation
289 Promenade Street
Providence, RI 02908

Notice: "To All Persons Engaging Non-Resident Contractors"
Regulation Re: Contractors and Subcontractors - "Regulation C"
Article III, Non-Resident Contractors
Any individual, partnership, joint venture, corporation, state, municipal government or exempt organization awarding a construction contract in Rhode Island to a non-resident contractor (as hereinafter defined) is required, pursuant to Section 44-1-6 of the General Laws, as last amended, to withhold 3% of the contract price to secure payment of any sales and use tax or income tax withheld, or both, that may be due to the State of Rhode Island in carrying out the contract.

Upon completion of the contract, the non-resident contractor is required to notify the Tax Administration shall, within 30 days after receipt of the request, audit the records and provide by certified mail to the person holding the funds and to the non-resident contractor, either a certificate of no tax due or a notice of taxes due.

The person holding the funds is required to pay to the Tax Administrator the amount set forth in the notice of taxed due, including interest and penalties, but not in excess of 3% of the contract price. Monies withheld in excess of taxes due the Tax Administrator may be paid to the non-resident contractor.
If the Tax Administrator does not furnish a certificate of no tax due or a notice of taxes due within 30 days after receipt of the request for the making of the audit, the person holding the funds may remit the full amount due to the non-resident contractor. The Tax Administrator shall not have any claim against such funds in the hand of the person holding the funds.

DEFINITION OF NON-RESIDENT CONTRACTOR

"A non-resident contractor is one who does not maintain a regular place of business in this state. A regular place of business shall be deemed to mean and include any bona fide office (other than a statutory office), factory, warehouse or other space in this state at which the taxpayer is doing business in its own name in a regular and systematic manner and which is continuously maintained, occupied and used by the taxpayer in carrying on its business through its regular employees regularly in attendance. A temporary office at the site of construction shall not constitute a regular place of business".
In order to effectively implement this legislative change which became effective on passage, non-resident contractors shall forward such notice of completion by certified or registered mail (in duplicate) to the Division of Taxation.
R. Gary Clark
Tax Administrator

XXX. DRUG & ALCOHOL TESTING PROGRAM

In accordance with the Federal Transit Administration Rules 49 CFR 40, 653, and 654, pertaining to prohibited drug use and Contract Service Providers who perform safety-sensitive functions as follows:

- Operation of Revenue Service Vehicles In and Out of Service.
- Dispatch or Control Movement of Revenue Service Vehicles.
- Maintain, Repair and Inspect Revenue Service Vehicle.

The standards they must meet are:

1. Provide each employee performing a RIPTA safety-sensitive function a copy of RIPTA's Prohibited Drug Use and Alcohol Misuse Policy and Procedures. Each Employee must sign and return to RIPTA "Confirmation of Receipt" form.
2. Provide RIPTA with documentation that all employees, both full and part-time, participate in a prohibited drug use testing program in compliance with 49 CFR 653 and an alcohol misuse testing program in compliance with 49 CFR 654. Documentation must be provided which insures that all testing is performed in compliance with 49 CFR 40.
3. Provide to RIPTA's, by February 1st, following each calendar year, annual Management Information Systems (MIS) reports for submission to the FTA. The MIS form used must be that which is contained in 49 CFR 653 and 654.
4. Identify a contact person responsible for handling all 49 CFR 40, 653 and 654 regulation compliance.

XXXI. DRUG AND ALCOHOL POLICY ACKNOWLEDGEMENT

CONTRACT SERVICE PROVIDER
ACKNOWLEDGEMENT AND CONFIRMATION OF RECEIPT

Employee Name:_____

Company Name: _____

I have received a copy of Rhode Island Public Transit Authority's Prohibited Drug Use and Alcohol Misuse Policy and Procedures.

Employee
Signature: _____ Date: _____

Return To: Drug and Alcohol Test Coordinator
Department of Human Resources
Rhode Island Public Transit Authority
Room 217
705 Elmwood Avenue
Providence, Rhode Island 02907

XXXII. SCOPE OF WORK

Rhode Island Public Transit Authority **(RIPTA)** is the statewide public transit system which provides fixed route bus service within 38 of 39 cities and towns in Rhode island.

The purpose of this procurement is to produce bus ticket and pass fare products for utilization in a Genfare (GFI) Trim Unit Document Issuer/Reader, in accordance with attached specifications. GFI Genfare is a wholly owned subsidiary of SPX Corporation, 751 Pratt Boulevard, Elk Grove Village, IL, 60007. Fareboxes and related equipment are installed in RIPTA buses and facilities. Prospective Bidders must demonstrate compatibility with GFI Trim Units. Such tickets and passes are deposited/inserted/swiped into the GFI Farebox System and electronically read and accepted as fare payment.

This Bid is not to be construed as a commitment of any kind; nor does it commit RIPTA to pay for costs incurred in the submission of a Bid or for any costs incurred prior to the execution of a formal contract.

XXXIII. PRICING SPECIFICATIONS

A. Pricing Forms

Unit price must be entered and extended and the total price of the Bid must be shown. Unit prices are to be quoted on the basis of the unit specified. RIPTA assumes no responsibility for errors. The Bid price/cost shall include all labor, materials, tools, equipment, transportation and other costs necessary to fully complete the procurement pursuant to the Bid terms, conditions and specifications. It is the intention of these specifications to provide and require complete services and supplies as prescribed herein. Any items omitted from the specifications, which are necessary for such service, shall be considered a portion of such service although not directly specified or called for in these specifications. No advantage shall be taken of the omission of any part of detail, which fails to make service complete and ready for full effective and efficient utilization.

XXXIV. TECHNICAL SPECIFICATIONS

The Contractor must hold all information concerning document design and coding in the strictest confidence and will permit access to his/her own employees on a need-to-know basis only**.**

Contractor must cover a 10% +/- for estimated amounts of tickets and passes to be printed. In the event that a new ticket or pass is to be printed, prices will be applicable to pricing quoted.

Contractor is responsible for highlighting and resolving any ambiguities in this specification.

Regardless of specified parameters, Contractor is responsible for ensuring that a given pass or ticket will be correctly read 99% of the first attempts. This assumes that the document reader has been properly maintained.

The Contractor is responsible for encoding all required information into the magnetic stripe on the documents. Encoding data must be obtained by the successful bidder from GFI Genfare. RIPTA reserves the right to change the fares and other encoding information with 90 days notice before document delivery is required.

A. Ticket Stock – Paper.

The documents used in the GFI Farebox (Trim stock, One Day passes and Riptiks) shall be credit card size with the following dimensions:

- Width 2.125" + .005"
- Length 3.375" +/- .010"
- Corner radius: 0.125" +/- .010"
- Thickness: 0.0070" +/- 0.0004"

Please refer to the attached GFI Genfare Technical Specifications on Ticket Stock – Paper section for all the requirements necessary in producing this product.

B. Ticket Stock – Plastic.

The documents used in the GFI Fare box (15-Ride Pass, Ten Ride Rhody Passes and Monthly Pass) shall be credit card size with the following dimensions:

- Width 2.125" + .005"
- Length 3.375" +/- .010"
- Corner radius: 0.125" +/- .010"
- Thickness: 0.010" +/- 0.0002"

Please refer to the attached GFI Genfare Technical Specifications on Ticket Stock – Plastic section for all the requirements necessary in producing this product.

C. Magnetics

1. Magnetic material can be applied either by coating, extruding or tape transfer type processes, providing all of the parameters are satisfied. It shall be impossible to separate the stripe from the document surface. Operation in the equipment must not cause the stripe ends to lift. Abrasiveness of the magnetic material shall not cause

magnetic head wear at a rate greater than that caused by standard credit card tape. No portion of the magnetic stripe material shall separate from the document stock during normal handling or use.

2. The magnetic stripe shall be positioned in an appropriate location per the attached GFI Genfare Technical Specifications to be properly read by the GFI Trim Unit.
3. Please refer to the attached GFI Genfare Technical Specifications for all the requirements necessary in producing magnetic strips on this product.

D. Document Graphics

1. Sample graphic designs for RIPTA's 15-Ride Passes, One Day Passes, Riptiks and Trim stock are attached. RIPTA will provide production ready artwork on digital media, in Adobe Photoshop CS format along with all required images and fonts. Artwork is set up as a 4-color process. Pantone colors will be provided, when appropriate. The Contractor will be responsible for producing a color proof of the materials for RIPTA's approval, and printing graphic materials to produce complete printed and cut documents, packaged as specified.
2. The Artwork for RIPTA's Monthly Pass and Ten Ride Pass will be altered on a monthly basis. . The Contractor will be responsible for producing a color proof of the materials for RIPTA's approval, and printing graphic materials to produce complete printed and cut documents, packaged as specified.
3. Documents shall be furnished printed with a four-color process on the face.
4. Each document shall contain a letter identifying the production run in which the document was produced and shall be serialized with a five or seven-digit number. Character size, style and location on each document of the identifying letter and serial number shall be subject to the approval of RIPTA. Numbers for each document type shall be restricted to ranges such that only a single serial number will be in use at any time for a particular ticket type. The serial number printed on the document must match the number encoded on the document.
5. No readily apparent manufacturer's logo will be allowed on the documents.
6. RIPTA reserves the right to change the graphics/look of the passes at anytime during the contract period without affecting the price. Provided however, that the same 4-color process stated in item 1 or 2 will apply.

E. Security

1. All Bidders are required to submit a detailed statement of their security policy and procedure, as it pertains to production of the documents described in this section, with their Bid. The Contractor must assume the primary responsibility of safeguarding information, valued documents such as tickets and passes being produced for RIPTA and transportation of such documents to RIPTA as a result of fraud, theft or other mishandling of valued documents.
2. RIPTA shall have the right to audit actual procedures employed by the Contractor and any Subcontractor involved with the production/transportation of these documents. Where deficiencies or noncompliance with agreed policy and procedure are detected in such audits the Contractor shall have 30 days to correct the conditions.
3. RIPTA reserves the right to have an authorized representative present during production of valued documents, notwithstanding that this will not release the Contractor from responsibility for such documents.

F. Packaging

1. Monthly Passes, Ten Ride Rhody Passes and 15-Ride Passes shall be packaged in groups of 100 cards by serial number order by type in a thermo-sealed clear plastic pack. No more than 10 packs shall be included in a sleeve and clearly labeled on the outside with document type, quantity and ticket numbers.
2. RIptiks shall be bundled in a thermo-sealed clear plastic containing 10 sequentially numbered tickets. Each bundle's first ticket shall end in 1 and last ticket shall end in 0. Packs shall be packed in sleeves of no more than 100 packs and clearly labeled on the outside with document type, quantity and ticket numbers.
3. Trim Stock shall be packaged in sleeves of no more than 1500 tickets and clearly labeled on the outside with document type and quantity.
4. One Day Pass shall be packaged in sleeves of no more than 1000 tickets and clearly labeled on the outside with document type and quantity.

G. Sample Approval

The contractor shall e-mail the final fare product proofs to RIPTA for approval of graphics and general appearance. Approval of these proofs shall not relieve the Contractor of their responsibility to ensure that production passes and tickets shall perform properly in

the GFI Trim Unit. The Contractor shall not initiate manufacture of production documents until approval has been obtained.

XXXV. ACCEPTANCE TESTING

1. Upon delivery, a quantity of at least 100 randomly selected pre-encoded fare products will be tested in 20 randomly selected GFI Trim Units. Ninety-nine percent of these fare products must be properly read or issued upon the first attempt. The other fare products must be properly read/issued within two more attempts.
2. If the test failed, the Company has the option of repeating the test or rejecting the fare product shipment. If the test is repeated other GFI Trim Units may be substituted.
3. A fare product shipment may also be rejected if it is determined that the printing quality is unacceptable.
4. If the fare product shipment is rejected the Contractor shall send a qualified representative to the Company to resolve the problem.
5. If a fare product shipment is rejected, it is the responsibility of the Contractor to ensure that replacement tickets are delivered in time for normal distribution. All freight charges for the rejected and replacement fare product shipment shall be the responsibility of the Contractor.

XXXVI. REFERENCES

Each bidder will provide three (3) references from companies they have recently provided similar types of fare media described in this bid document. The reference list should include contact names and telephone numbers for each reference.

XXXVII. DELIVERY SCHEDULE: TICKETS & PASS DOCUMENTS

Upon award of the Contract, Vendor will be contacted at least 2 months in advance of order type and quantity.

XXXVIII. DELIVERY LOCATION:

All fare products samples for testing should be addressed to:

Maureen Neira
Assistant General Manager of Finance/ CFO
Rhode Island Public Transit Authority
705 Elmwood Avenue
Providence, RI 02907

Each Proposal will be submitted with the understanding that the acceptance in writing by RIPTA of the offer to furnish and deliver any or all of the fare products described herein shall constitute a contract between the Bidder and RIPTA, and that shall bind the Bidder to furnish and deliver at the prices given and in accordance with the conditions of the accepted Bid and specifications.

XXXIX. NON-STOCK ITEMS

In the event that the Bidder is out of stock on any item ordered by RIPTA, the Bidder will be responsible for all freight and premium charges associated with special ordering the item(s) to meet the maximum delivery time specified. If delivery of the item(s) will exceed the maximum guaranteed delivery time specified, RIPTA must be notified for prior written approval at the time of order placement.

XL. SILENCE OF SPECIFICATIONS.

The apparent silence of these specifications as to any detail, or the apparent omission from it of a detailed description concerning any point, shall be regarded as meaning that only the best acceptable commercial practice is to prevail and that only services of the highest standard are to be used. All interpretations of these specifications shall be made on the basis of this statement.

XLI. PROPOSAL EVALUATION CRITERIA

A. Cost
B. Delivery Schedule
C. Experience
D. References

XLII. CONTRACT DURATION

This is a one-year contract commencing with the delivery of fare products in July 2013. There are also four annual renewal options to be exercised at the sole discretion of the Authority. Estimated Annual quantities are given in the Proposal Price Submittal Form. The Authority reserves the right to amend the quantities or delete a fare product at its sole discretion. Proposers must complete pricing for the Base Contract Year and all option years.

XLIII. BASIS OF AWARD

The Contract will be awarded to the Vendor that submits the lowest total overall cost to the Authority.

RHODE ISLAND PUBLIC TRANSIT AUTHORITY
Request for Proposal Number 13-31
Fare Media Price Submittal Worksheet
Vendor:

XLIV. FARE MEDIA PRICE SUBMITTAL WORKSHEET

A. Base Contract Period: July 1, 2013 to June 30, 2014

Product	Estimated Annual Quantity	Cost per thousand	Extended Cost
Monthly Passes	180,000		
15-Ride Passes	20,000		
Riptik	1,500,000		
TRIM Stock	2,500,000		
Ten Ride Rhody	300,000		
One Day Passes	20,000		
TOTAL	**ANNUAL**	COST	

B. Option Year One: July 1, 2014 to June 30, 2015

Product	Estimated Annual Quantity	Cost per thousand	Extended Cost
Monthly Passes	180,000		
15-Ride Passes	20,000		
Riptik	1,500,000		
TRIM Stock	2,500,000		
Ten Ride Rhody	300,000		
One Day Passes	20,000		
TOTAL	**ANNUAL**	COST	

C. Option Year Two: July 1, 2015 to June 30, 2016

Product	Estimated Annual Quantity	Cost per thousand	Extended Cost
Monthly Passes	180,000		
15-Ride Passes	20,000		
Riptik	1,500,000		
TRIM Stock	2,500,000		
Ten Ride Rhody	300,000		
One Day Passes	20,000		
TOTAL	**ANNUAL**	COST	

RHODE ISLAND PUBLIC TRANSIT AUTHORITY
Request for Proposal Number 13-31
Fare Media Price Submittal Worksheet
Vendor:

D. Option Year Three: July 1, 2016 to June 30, 2017

Product	Estimated Annual Quantity	Cost per thousand	Extended Cost
Monthly Passes	180,000		
15-Ride Passes	20,000		
Riptik	1,500,000		
TRIM Stock	2,500,000		
Ten Ride Rhody	300,000		
One Day Passes	20,000		
TOTAL	**ANNUAL**	COST	

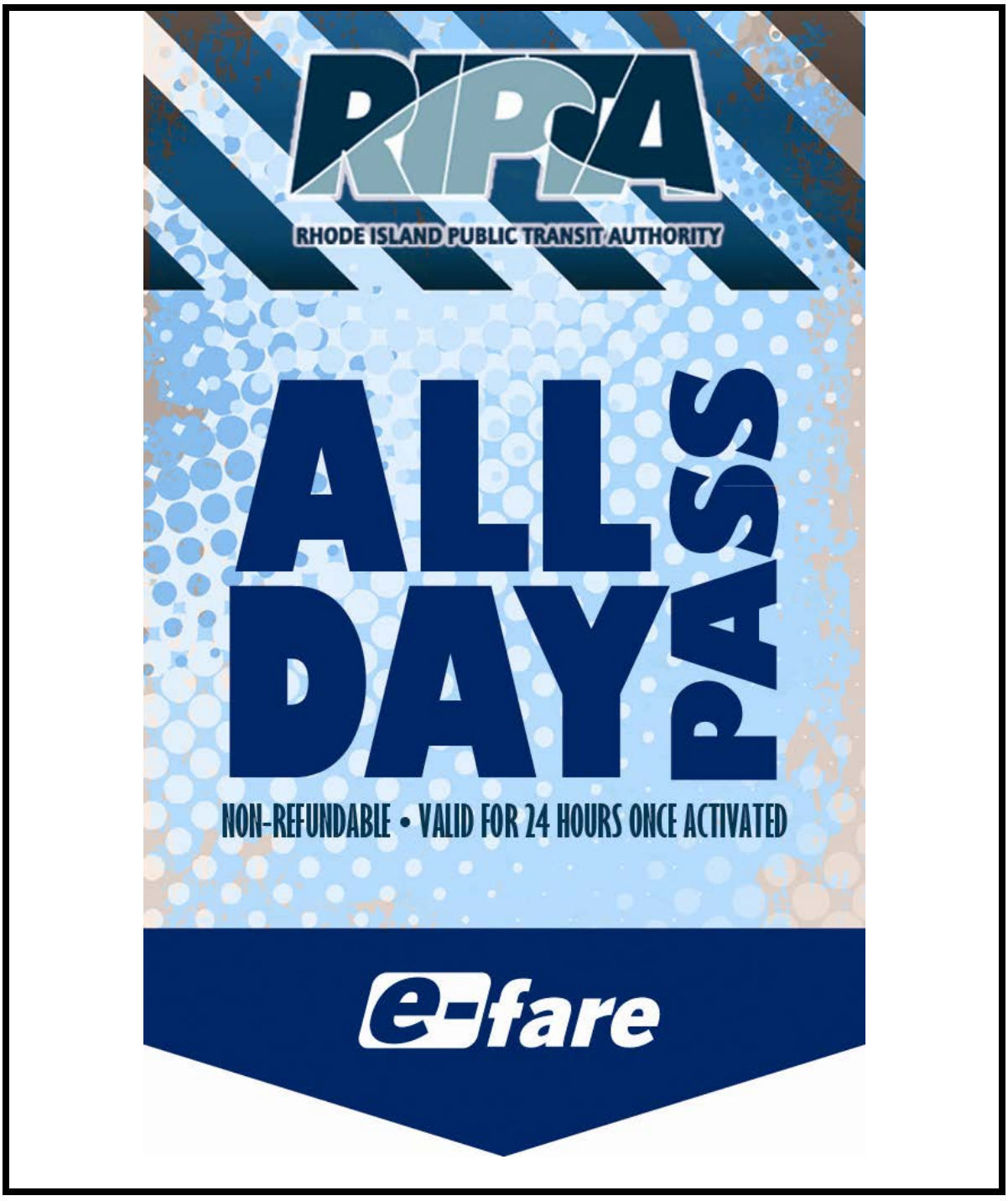
E. Option Year Four: July 1, 2017 to June 30, 2018

Product	Estimated Annual Quantity	Cost per thousand	Extended Cost
Monthly Passes	180,000		
15-Ride Passes	20,000		
Riptik	1,500,000		
TRIM Stock	2,500,000		
Ten Ride Rhody	300,000		
One Day Passes	20,000		
TOTAL	**ANNUAL**	COST	

XLV. SAMPLE FARE MEDIA

THESE SAMPLES ARE FOR ILLUSTRATIVE PURPOSES ONLY. FINAL ARTWORK WILL BE PROVIDED IN ACCORDANCE WITH THE SCOPE OF WORK

MAY 2013
RIPTA
RHODE ISLAND PUBLIC TRANSIT AUTHORITY
e-fare
MONTHLY PASS


RIPTA
RHODE ISLAND PUBLIC TRANSIT AUTHORITY
ALL DAY PASS
NON-REFUNDABLE • VALID FOR 24 HOURS ONCE ACTIVATED
e-fare

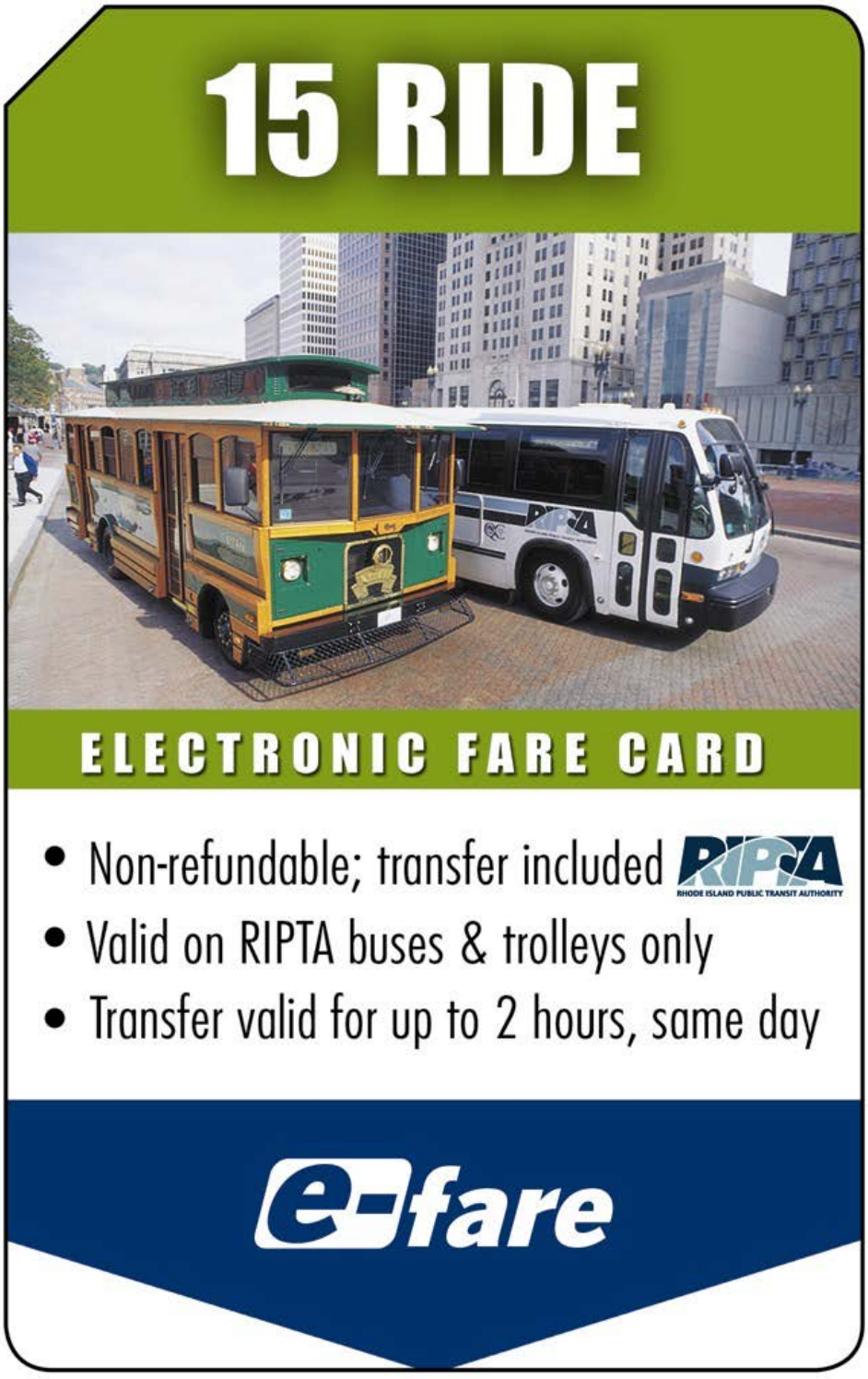
RIPTIK

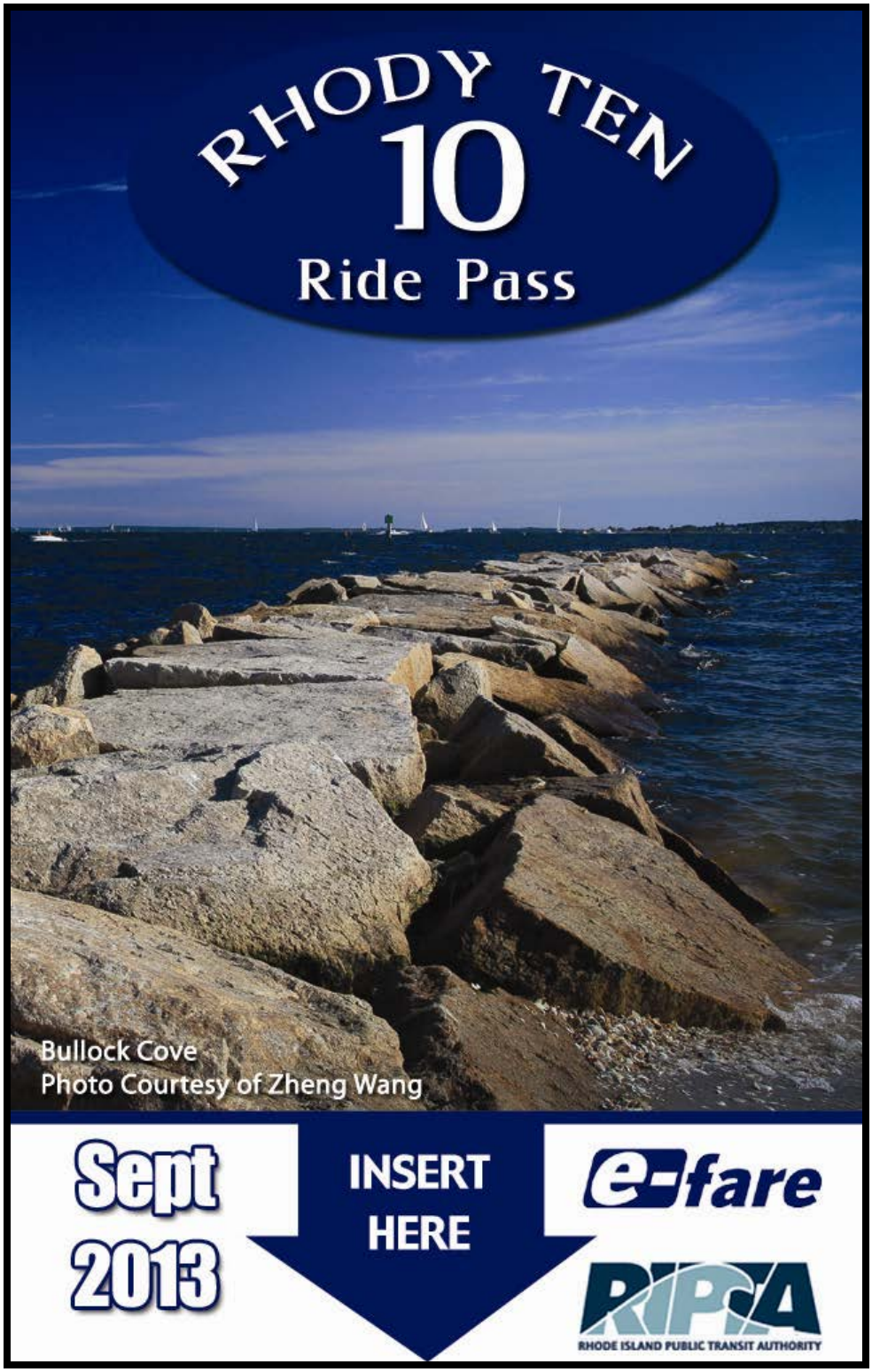
ELECTRONIC FARE CARD

- Non-refundable
- Good for two hour time period after insertion

RIPTA
RHODE ISLAND PUBLIC TRANSIT AUTHORITY

e-fare


15 RIDE
ELECTRONIC FARE CARD
• Non-refundable; transfer included
RIPTA
RHODE ISLAND PUBLIC TRANSIT AUTHORITY
• Valid on RIPTA buses & trolleys only
• Transfer valid for up to 2 hours, same day
e-fare


RHODY TEN
10
Ride Pass
Bullock Cove
Photo Courtesy of Zheng Wang
Sept
2013
INSERT
HERE
e-fare
RIPTA
RHODE ISLAND PUBLIC TRANSIT AUTHORITY

XLVI. GFI TECHNICAL SPECIFICATIONS

Please open attached PDF File entitled "GFI Technical Specifications" for the document.

It should be noted that Sections 18 and 19 have been deleted, therefore, Pages 57, 58 and 59 are missing from the Printed document.

GFI GENFARE
a Unit of General Signal

751 Pratt Boulevard
Elk Grove Village, IL 60007
Tel: (708) 593-8855
FAX: (708) 593-1824

GFI GENFARE
TECHNICAL SPECIFICATIONS
MAGNETIC STRIPE TICKETS
FOR USE IN
GFI FARE COLLECTION/VENDING EQUIPMENT

© GFI 1989,1990,1991
portions © AIM USA Inc 1989,1990

First Issue: February 16, 1989

Revision: A: August 16, 1990
Revision: B: October 3, 1990
Revision: C: January 31, 1991

DOCUMENT NO.: 1002FE-C
FILE: MAGTIX.GFI

TABLE OF CONTENTS

I	**INTRODUCTION**	3
	1.0 INTRODUCTION	4
	2.0 GLOSSARY	5
	3.0 APPLICABLE DOCUMENTS	16
II	**TICKET STOCK**	17
	4.0 TICKET STOCK - PAPER	18
	5.0 TICKET STOCK - PLASTIC	21
	6.0 TICKET STOCK - TRIPLEX	22
	7.0 TICKET STOCK - THERMAL PAPER	24
III	**PHYSICAL CHARACTERISTICS**	27
	8.0 PHYSICAL CHARACTERISTICS	28
	9.0 PHYSICAL CHARACTERISTICS OF MAGNETIC MATERIAL.	32
IV	**MAGNETIC CHARACTERISTICS**	35
	10.0 MAGNETIC CHARACTERISTICS	36
	11.0 ENCODING SPECIFICATIONS.	45
V	**MISCELLANEOUS**	48
	12.0 SAFETY	49
	13.0 PRINTING	50
	14.0 TICKET HANDLING CHARACTERISTICS	52
	15.0 TICKET ENVIRONMENT	54
	16.0 PACKING AND SHIPPING	55
	17.0 SPECIAL TICKETS	56
	18.0 LIST OF MANUFACTURERS	57
	19.0 LIST OF TESTING COMPANIES	59
	20.0 SAMPLE SPECIFICATION CONFIGURATIONS	60

I INTRODUCTION

This document has been compiled to act as a default specification for the purchase of tickets for use in GFI Fare Collection Equipment. Tickets purchased to this specification in accordance with a particular application can be guaranteed to function in GFI equipment.

Some applications may need minor changes to the specification, such as thickness, stripe position etc. These should be specified separately.

The use of these specifications by a Transit Authority when purchasing tickets should guaranty the quality. The use of one of the testing houses listed in section 19, is recommended to ensure the supplied quality.

1.0 INTRODUCTION

1.1 General

This document includes all relevant specifications which define the material quality, dimensions, magnetic properties and durability of the magnetic stripe tickets and ticket stock to be used with the GFI Fare Collection Equipment, such as turnstiles, fareboxes, vending machines, card readers, encoding machines and any other devices or equipment as made by GFI GENFARE which use, read, encode, and/or print upon magnetic ticket materials.

NOTE: While many of the technical specifications and references herein are derivative of those used in bank card and cards used for electronic funds transfer, these specifications are NOT suitable for credit or debit cards or for bank cards used for electronic funds transfer.

1.2 Purpose With the increasing use of magnetic ticket in Fare Collection equipment it has become increasingly necessary for a definitive specification for the tickets. This specification covers all aspects of the ticket from substrate material through magnetic material, including encoding, printing, and packaging.

1.3 Specification Parameters

This specification shall cover the following parameters of ticket design and manufacture:

1.3.1 Base Stock Material: Paper, triplex, and polyester plastic. Other materials and laminates may use some of these specifications, but are not covered in the associated testing procedures.

1.3.2 Magnetic Stripe Material: High and low coercivity materials, applied by tape or slurry to the base stock material.

1.3.3 Dimension and Configuration: Die cut, continuous roll stock, die cut roll stock and fan fold ticket stock.

1.3.4 Printing and Packaging: Standard printing, optical sense marks, thermal and thermal transfer printing, packaging and shipping.

1.4 How to Use This Document This document is meant to be all encompassing for the purpose of ticket procurement. It should be understood that not all specifications contained in the document can pertain to every ticket e.g. a ticket cannot be

die-cut, fan-fold and roll stock at the same time. It is expected that particular specifications will be referenced for every requirement. For examples of sample configurations and how this document applies to them see chapter 20.

2.0 GLOSSARY

The following is a glossary of terms used in this document:

ANSI	American National Standards Institute
Azimuth Error	A decode error resulting from misalignment of the read head gap with the encoded flux reversals on a magnetic stripe.
B	Magnetic Flux or induction; cgs unit is gauss.
Br	Residual induction.
Bs	Saturation induction.
Biphase	The binary encoding technique used in magnetic stripe, wherein a bit-cell represents a logic One if it has a flux reversal at its midpoint and represents a logical Zero if it does not. Also known as Aiken Biphase, F2F, and two frequency coherent phase encoding.
Bit	A binary digit, having the value of either 0 or 1.
Bit Cell	The distance between flux reversals on a magnetic stripe required for the recording of a binary digit, i.e. a bit; numerically equal to the reciprocal of the encoding density.
BPI	Bits per inch, the encoding density of a magnetic stripe.
Bleed	Graphics printed up to one or more edges of the ticket.
Blocking	The process of sticking together of tickets during storage. this process is sometimes accompanied by the transfer of magnetic material from one card to the next.

cgs	A system of units in which the centimeter-gram-second are the units for the fundamental quantities length-mass-time.
Check Digit	Using an algorithm with one or more data sets to compute a digit, which is used to verify validity of the data set.
Clocking Bits	The all Zero bit-cells encoded at the beginning and end of a magnetic stripe to permit the read circuit to synchronize at the beginning of a read.
Coercive Force	The demagnetizing force required to reduce the induction to zero. Usually refers to the maximum demagnetizing force required to erase a magnetic stripe i.e. that for a fully saturated material.
Coercivity (Hc)	The property of a magnetic material which resists demagnetization, measured by the maximum value of its coercive force; the cgs unit is oersted.
Coercivity - low	300 - 900 Oersteds
Coercivity - high	2500 - 4000 Oersteds (See High Energy)
Curl	The deviation of a card from flat. Can be defined as three types; lengthwise curl, widthwise curl and diagonal curl.
Degaussing	The process of demagnetizing a magnetic material such that its remanent magnetism is zero.
Demagnetization Curve	The second quadrant portion of the saturated condition hysteresis loop of a permanent=magnet material (frequently called the B/H curve).
Demagnetizing Force	A magnetic field opposite in polarity to that of a previously magnetized material in such a way that it reduces the remanent induction.
Density	The number of bit cells encoded per unit length along the magnetic stripe, usually expressed as bits-per-inch, or BPI.
Encoding	The process of creating flux reversals at specific locations along the length of a

	magnetic stripe such that the flux reversal pattern represents specific data.
End Sentinel	A defined bit-pattern in an encoding format which cannot be used for a data character, and which is encoded on the magnetic stripe immediately following the last data character bit pattern.
Erasing	The process of removing all flux reversals from the length of a magnetic stripe.
Ferromagnetic Material	Any material that has a permeability substantially greater than 1 and that exhibits magnetic hysteresis properties. Strongly attracted by a magnetic field.
Flux Density (B)	The number of lines of magnetic flux per unit area; the cgs unit is gauss.
Flux Reversal	A location (interface) on the magnetic stripe where the magnetic particles on the two sides of the interface have like poles facing each other, i.e. a South-South or a North-North interface, resulting in a concentration of magnetic flux at the interface.
Forward Read	Reading the magnetic stripe starting at the end containing the start Sentinel.
Framing Characters	The Start sentinel. End sentinel, and LRC characters.
ftpi	Flux transitions (i.e. reversals) per inch.
Gap, head	The short section of non-magnetic material at the face of a read or encode head which is in contact with the magnetic stripe during reading or encoding; in practice, essentially the same as ana air gap.
Gauss	The cgs unit of magnetic induction, = 1 maxwell/cm^2.
H	Magnetizing force or field strength; the cgs unit is oersted.
Hc	Coercivity.

Head Pressure	The force per unit contact width with which the head is held in contact with the magnetic stripe.
Head, encode	A device consisting of a solenoid coil wrapped around a ring of magnetically conductive material which has a short section of non-magnetic material called a gap; the magnetic field produced at the gap is used to create flux reversals in a magnetic stripe.
Head, read	A device similar to and acting in reciprocity to an encode head, such that movement of the head gap across the concentrated magnetic flux at a flux reversal induces a current in the head coil.
High Energy Stripe	High coercivity magnetic stripe, usually above 3000 Oersteds; while requiring higher magnetic fields to encode data, it does not have a higher read output.
Hub	The center cardboard or plastic part of a roll of tickets.
Hysteresis	The property of a material wherein its condition at any instant depends upon its preceding condition; the failure of the magnetism to retrace its path as the field H varies.
Hysteresis Loop	A curve showing the cyclic relationship between magnetizing force H and induction B in a magnetic material; also called the B/H curve.
Individual Signal Amplitude	The peak-to-peak amplitude of a single read voltage signal.
Inductance	The inductance of a coil or solenoid is the rate of increase in magnetic flux linkage with increase of current in the coil, where linkage is the product of the flux through the coil by the number of turns; the cgs unit of inductance is the henry, equal to 10^8 maxwell-turns per ampere of current.
Induction, magnetic (B)	The flux density entering a magnetic material; the cgs unit is gauss, equal to 1 maxwell/cm^2.

Induction, residual(Br)	The induction remaining in a magnetic material when the magnetizing force adequate to saturate the material is reduced to zero.
Induction, saturation (Bs)	The largest induction possible in a magnetic material.
ISO	International Standards Organization.
Jitter	The incorrect location of a flux reversal on a magnetic stripe, whether real or apparent; if the reversal is improperly placed on the stripe, it is called encoded jitter; jitter resulting from speed changes during the read is called acceleration jitter; jitter resulting from read circuit changes with amplitude or frequency is called phase jitter.
Leading Zeros	Clocking bits before the Start Sentinel.
Linkage	The product of the flux through a coil by the number of turns in the coil; the cgs unit is maxwell-turns.
Line of Flux	A term used to describe magnetic flux; 1 line of flux = 1 maxwell.
Low Energy Stripe	Low coercivity magnetic stripe, usually 300 oersted; does not refer to read output.
LRC Character	Longitudinal redundancy Check; an encoded bit-pattern following the End Sentinel in some encoding protocols to check for bit errors in the preceding bit string.
Magnetic Field	A region in which magnetic lines of flux or force occur.
Magnetic Field Strength (H)	The magnitude of the force in free space that would be exerted on a unit magnetic pole; the cgs unit is oersted, equal to 1 maxwell/cm^2.
Magnetic Flux (Φ)	The total quantity of lines of flux that exist in a given area; the cgs unit is maxwell.
Magnetic Line of Force	An imaginary line representing the points in a magnetic field that produce the same force on a unit magnetic pole; 1 line of

	force = 1 maxwell.
Magnetic Pole	A region where lines of magnetic flux originate (North) or terminate (South).
Magnetic Stripe	A thin layer of material consisting of oriented ferromagnetic particles rigidly held together by a resin binder and bonded to a non-magnetic carrier medium such as paper or plastic.
Magnetization	The excess induction in a ferromagnetic material over that for free space; the cgs unit is gauss, equal to 4π poles/cm^3.
Magnetization Curve	The portion of the first quadrant of a B/H hysteresis loop that shows the relationship between magnetizing force and induction for a magnetic material magnetized from an initially completely demagnetized state.
Magnetizing Force (H)	Same as magnetic field strength.
Maxwell	The cgs unit of magnetic flux, the flux through a square centimeter normal to a field of one oersted.
Micron	One millionth of a meter, equal to 40 thousandths of an inch.
Mil	One thousandth of an inch.
mks	A system of units in which the meter-kilogram-second are the units for the fundamental quantities length-mass-time.
N	North pole of a magnet.
NBS	National Bureau of Standards; now called the National Institute of Standards and Technology.
NIST	National Institute of Standards and Technology; formally called the National Bureau of Standards.
North Pole (N)	The portion of a magnetized object that, if free to move, will point toward the portion of the Earth geographically designated as North; lines of flux emanate from the North Pole and enter the South Pole.

Oersted (Oe)	The cgs unit of magnetizing force equal to one dyne per unit pole, or magnetic field strength equal to the field at one centimeter from a unit pole
Orientation Ratio	The ratio of remanence in the longitudinal direction to the remanence in the transverse direction of a magnetic stripe.
Overwrite	Re-encode; the data on the magnetic stripe is erased and new data is encoded.
Oxide Thickness	The thickness of the magnetic stripe material.
Parity	Oddness or evenness; in binary encoding, an odd or even number of Ones; the parity bit is the additional bit required to ensure the parity of any specified bit-string.
Paper Ticket	Card or ticket with base material made from paper stock.
Permeability	The ratio of the flux density in a material to the magnetizing force producing it.
Permeance	A term describing the relative ease with which flux passes through a given material or space. the reciprocal of reluctance.
Plastic Ticket	Card or ticket with base material made of plastic - usually polyester but may be other plastic material such as pvc.
Polyester	A plastic material frequently used for ID badges, access control cards and tickets; more expensive but stronger than PVC; cannot be embossed and requires higher laminating temperatures.
Print - Applied	Printing applied to the ticket subsequent to factory printing by means of equipment such as vending machines, turnstiles, or other ticket processing equipment.
Print - Factory	Printing on the ticket done at the time of manufacture of the ticket.
Profile	The deviation of the magnetic stripe

	surface from flatness; a positive profile is convex, and a negative profile is concave.
PTB	Physikalish-Technische Bundesanstalt, the German (FR) standards laboratory.
Reference Card	An international standard magnetic stripe card designated as RM 7811/2, supplied and certified by PTB, with the stripe made from certified SRM 3200 tape.
Reference Signal Amplitude	The maximum average read signal amplitude of the PTB standard reference card corrected to the NIST master standard tape.
Reluctance	The relative resistance of a material or space to the passage of flux. The reciprocal of permeance.
Reluctivity	The reciprocal of permeability.
Remanence (Br)	Same as residual induction, i.e. residual magnetization.
Retentivity (Br/Bs)	The ratio of the residual induction to the saturation induction of a magnetic material; also called Squareness Ratio.
Reverse read	Reading the magnetic stripe starting at the end containing the End Sentinel.
RM	Reference Material, the German PTB analog of NIST SRM.
S	South pole of a magnet.
Saturation	A condition where all the available elementary magnetic domains in a ferromagnetic material are aligned in substantially the same direction.
Self-clocking	That property of biphase which permits encoded magnetic stripes to be read at different speeds; the Ones frequency is always twice the Zeros frequency, and the read circuit need only sync on a string of known Zeros to begin reading at any speed.
Separator	Also known as a field separator, a designated character in an encoding

	character set which is used to separate data fields, and cannot be used for data.
SFD	Switching Field Distribution; the ratio of the half-peak width of the B/H loop to the coercive force.
South Pole (S)	The portion of a magnetized object that, if free to move, will point toward the portion of the Earth geographically designated as South; lines of flux emanate from the North pole and enter the South pole.
Spacing Loss	A reduction in read head signal output resulting from the head gap not being in contact with the magnetic stripe; the read signal decreases exponentially with distance between gap and stripe.
Squareness ratio	Same as retentivity.
SRM 3200	Standard Reference Material Number 3200, a secondary standard magnetic tape supplied by the National Bureau of Standards and certified for signal amplitude.
Start-Sentinel	A defined bit pattern in an encoding format which cannot be an all Zeros pattern, and which is encoded on the magnetic stripe immediately preceding the first character bit pattern.
Substrate	The material on which the magnetic stripe is deposited.
Surface Profile	The average deviation of the magnetic stripe surface from a straight line measured in micro-inches per tenth of an inch of width.
Surface Roughness	The average deviation of the magnetic stripe surface from a straight line, measured in micro-inches per tenth of an inch of width.
Susceptibility	The ratio of the intensity of magnetization to the magnetizing force.
Telescoping	The deviation from flat of a roll of tickets, where the center hub is displaced from the roll.

Tesla	The mks unit of magnetic flux density, equal to 10^4 gauss.
Thermal Ticket	Card or ticket with one or both sides coated with a thermal sensitive coating.
Timing Mark/Hole	A mark or hole on the ticket which is sensed by a detector. Used to detect the position of a card in a printer or encoder (usually before cutting ticket)
Timing Track	A pattern of flux reversals encoded on a magnetic stripe other than the data track, used to generate the required pulses during encoding of the data track.
Top-of-Form Mark	A mark used to detect the top of a card or ticket (usually for printing or for cutting)
Track	A strip of specified width and location running the length of the magnetic stripe on which data is encoded. ANSI/ISO standards define three track locations for the magnetic stripe on credit/financial cards, called Track 1, 2, and 3; the tracks are 0.110" wide, with Track 1 closest to the card edge.
Trailing Zeros	Clocking bits following the End sentinel-LRC.
Triplex	A material comprising a sandwich of paper-plastic-paper.
Triplex Ticket	Card or ticket with a base material made from Triplex stock.
VSM	Vibrating Sample Magnetometer, a device used to measure magnetic properties of pigments/powders.
Wear	Mechanical alteration of the magnetic stripe and of the read/encode head resulting from the motion of the head along the stripe.
Weber	The mks unit of total flux, equal to 10^8 maxwell.
Write	Same as encode.

3.0 APPLICABLE DOCUMENTS

This section details where extra information can be obtained if the reader wishes to conduct further research. Not all of these standards apply to fare collection tickets.

ISO 7810 -	Identification Cards - Physical Characteristics.
ISO 7811/1 -	Identification Cards - Recording Technique Part 1: Embossing
ISO 7811/2 -	Identification Cards - Recording Technique Part 2: Magnetic Stripe
ISO 7811/3 -	Identification Cards - Recording Technique Part 3: Location of Embossed Characters on ID-1 Cards
ISO 7811/4 -	Identification Cards - Recording Technique Part 4: Location of Read Only Magnetic Tracks - Tracks 1 and 2
ISO 7811/5 -	Identification Cards - Recording Technique Part 5: Location of Read-Write Magnetic Track - Track 3
ISO 7812 -	Identification Cards - Numbering System and Registration Procedure for Issuer Identifiers
ISO 7813 -	Identification Cards - Financial Transaction Cards

ANSI Standard X3.11 - 1969, Specification for "General Purpose Paper Cards for Information Processing."

ANSI Standard X3.30 - 1971, Representation for Calendar Date and Ordinal Date

ANSI Standard X3.40 - 1983, Information Systems - Unrecorded Magnetic Tape

ANSI Standard X4.13 - 1983, Financial Services, Financial Transaction Cards

ANSI Standard X4.16 - 1983, Financial Transaction Cards, Magnetic Stripe Encoding

ANSI Standard X9.1 - 1980, Magnetic Stripe Data Content for Track 3

Where the above documents are superseded by a revision approved by American National Standard, Inc (ANSI), the revised standard shall apply.

TAPPI - T425 Opacity of Paper

The above glossary is reproduced (with additions) from the AIM Glossary of Terms available from:

AIM USA
1326 Freeport Road
Pittsburgh, PA 15238 USA
Phone: (412) 963-8588
FAX: (412) 963-8753

II TICKET STOCK

This section covers the base material for the tickets. The section is divided into separate chapters for the different base materials. The user of these specifications should chose the appropriate chapter relevant to the material in use.

4.0 TICKET STOCK - PAPER

4.1 Material and Quality The paper stock quality shall meet or exceed the requirements of ANSI X3.11 - 1969, Section 3, with the exception that it shall be modified to slow size variations caused by humidity, temperature, or repeated handling, and is further modified to the extent specified below.

4.1.1 Furnish The paper shall be 100% chemical pulp; no ground wood permitted.

The fiber composition shall be determined by the method standardized by Technical Committee ISO/TC 6, Paper, board and pulps.

4.1.2 Basis Weight The basis weight shall be:

99 +/- 5.5 pounds per ream of 500 sheets, 24 X 36 inches.

4.1.3 Thickness The thickness shall be:

0.0070 +/- 0.0004 in (0.178 +/- 0.01 mm).

For other thicknesses consult GFI for specifications.

4.1.4 Bursting Strength The bursting strength shall be :

65.0 pounds per square inch - minimum.

4.1.5 Stiffness The dry stiffness shall be:

Grain Direction = 18.0 gram - centimeter minimum
Cross Direction = 6.0 gram - centimeter minimum

The wet stiffness shall be:

Grain Direction = 13.0 gram - centimeter minimum
Cross Direction = 2.0 gram - centimeter minimum

4.1.6 Coefficient of Friction The static coefficient of friction of the finished ticket shall be:

Coefficient of Friction = 0.15 to 0.45

The kinetic coefficient of friction shall not be less than 75% of the static coefficient of friction.

4.1.7 Expansion and Contraction The maximum expansion and contraction with a change in relative humidity

of from 20% to 75% or from 75% to 20% shall be less than:

In the grain direction 0.25%
In the cross grain direction 0.70%

4.2 Color The base material shall be white card stock, unless otherwise specified herein or by reference and approved.

4.3 Paper Opacity The minimum paper opacity shall be 80% as defined in TAPPI - T425 Opacity of Paper.

4.4 Curl The maximum curl of the tickets at equilibrium with any relative humidity between 20% and 75% shall not exceed the following values:

Axis of curl parallel to ticket length: 0.09 inch

Axis of curl perpendicular to ticket length: 0.10 inch

Axis of curl parallel to ticket diagonal: 0.10 inch

Figure 12 shows the various forms of curl.

4.5 Internal Tearing Resistance The minimum resistance to tear in each direction shall be 1,225 N (In common practice this value is equivalent to 125 gm).

Tearing resistance shall be determined by the method specified in ISO 1974.

4.6 Ash Content The ash content shall not exceed 5%,

The ash content shall be determined by the method specified in ISO/R 2144.

4.7 pH Value The pH obtained by the hot extraction method shall not be below 5.0.

Hydrogen ion concentration shall be determined by the method standardized by Technical Committee ISO/TC 6, Paper, board and pulps.

4.8 Writing Quality Writing quality shall be determined by the method standardized by Technical Committee ISO/TC 6, Paper Board and Pulps.

4.9 Smoothness (Roughness) The roughness on either side of the paper shall correspond to a reading in the range of 75 - 125 Sheffield Units and the ratio of the smoothness of one side to the other shall not exceed 1.3:1. This requirement will be defined more closely by the particular application.

4.10 Abrasion Loss The loss of mass from each side of the paper shall not exceed 50 mg.

The abrasion loss shall be determined by the method standardized by Technical Committee ISO/TC 6, Paper Board and Pulps.

4.11 Toxicity No part of the ticket shall be capable of causing bodily harm by absorption, inhalation, or ingestion.

5.0 TICKET STOCK - PLASTIC

5.1 Material and Quality The card material shall be polyester. The card shall be of such nature that deformations in normal use (bends, not creases) can be reduced elastically to flatness by the reading or print device without impairing the function of the card.

5.2 Color The base material shall be white stock, unless otherwise specified herein or by reference and approved.

5.3 Opacity The opacity of the card shall be no less than 70 percent in accordance with TAPPI T 425 om-81

5.4 Curl. The maximum curl of the tickets at equilibrium with any relative humidity between 20% and 75% shall not exceed the following values:

Axis of curl parallel to ticket length: 0.08 inch

Axis of curl perpendicular to ticket length: 0.08 inch

Axis of curl parallel to ticket diagonal: 0.10 inch

Figure 12 shows the various forms of curl.

5.5 Surface Distortions. Any surface distortions, irregularities, or raised areas that might interfere with a recording or playback head shall be at least 0.125 in. from the edges of the magnetic material. No raised areas shall exceed 0.001 in. on the entire back surface of the card or within 0.10 in. of the top and bottom edge of the front of the card. Over the rest of the front surface of the card, no raised area shall exceed 0.002 in.

5.6 Contamination. The card and any material added to the card shall be made of a material that will not contaminate the devices that stripe, encode or read the card. The card material shall not contain elements that migrate into and modify the magnetic material.

5.7 Resistance to Chemicals. The card shall be resistant to chemical effects arising in normal handling and use.

5.8 Ultraviolet Light. The card shall resist physical degradation due to the ultraviolet light that will appear in normal use.

5.9 Card Surfaces. Burrs normal to the card face (front or back) shall not exceed 0.0003 in. above the card surface.

5.10 Thickness. The thickness shall be: 0.010 +/-).0002 in.

6.0 TICKET STOCK - TRIPLEX

6.1 Material and Quality The card material shall be a 3 ply, triple layer of paper, polyester (or other synthetic material), and paper. The card shall be of such nature that deformations in normal use (bends, not creases) can be reduced elastically to flatness by the reading or print device without impairing the function of the card.

6.2 Color The base material shall be white stock, unless otherwise specified herein or by reference and approved.

6.3 Opacity The opacity of the card shall be no less than 70 percent in accordance with TAPPI T 425 om-81

6.4 Curl The maximum curl of the tickets at equilibrium with any relative humidity between 20% and 75% shall not exceed the following values:

Axis of curl parallel to ticket length: 0.09 inch

Axis of curl perpendicular to ticket length: 0.10 inch

Axis of curl parallel to ticket diagonal: 0.10 inch

Figure 12 shows the various forms of curl.

6.5 Surface Distortions. Any surface distortions, irregularities, or raised areas that might interfere with a recording or playback head shall be at least 0.125 in. from the edges of the magnetic material. No raised areas shall exceed 0.001 in. on the entire back surface of the card or within 0.10 in. of the top and bottom edge of the front of the card. Over the rest of the front surface of the card, no raised area shall exceed 0.002 in.

6.6 Smoothness (Roughness) The maximum roughness on either side of the paper shall correspond to a reading of 125 Sheffield Units and the ratio of the smoothness of one side to the other shall not exceed 1.3:1.

6.7 Contamination. The card and any material added to the card shall be made of a material that will not contaminate the devices that stripe, encode or read the card. The card material shall not contain elements that migrate into and modify the magnetic material.

6.8 Resistance to Chemicals. The card shall be resistant to chemical effects arising in normal handling and use.

6.9 Ultraviolet Light. The card shall resist physical degradation due to the ultraviolet light that will appear in normal use.

6.10 Card Surfaces. Burrs normal to the card face (front or back) shall not exceed 0.0003 in. above the card surface.

6.11 Thickness. The thickness shall be:

0.010 +/- 0.0004 in (0.254 +/- 0.01 mm).

For other thicknesses consult GFI for specifications.

7.0 TICKET STOCK - THERMAL PAPER

7.1 Material and Quality The paper stock quality shall meet or exceed the requirements of ANSI X3.11 - 1969, Section 3, with the exception that it shall be modified to slow size variations caused by humidity, temperature, or repeated handling, and is further modified to the extent specified below.

7.1.1 Furnish The paper shall be 100% chemical pulp; no ground wood permitted.

The fiber composition shall be determined by the method standardized by Technical Committee ISO/TC 6, Paper, board and pulps.

7.1.2 Basis Weight The basis weight shall be:

129 +/- 5.5 pounds per ream of 500 sheets, 25 X 38 inches.

7.1.3 Thickness The thickness shall be:

0.0076 +/- 0.0004 in (0.193 +/- 0.01 mm).

For other thicknesses consult GFI for specifications.

7.1.4 Stiffness The dry stiffness shall be:

Grain Direction = 18.0 gram - centimeter minimum
Cross Direction = 6.0 gram - centimeter minimum

The wet stiffness shall be:

Grain Direction = 13.0 gram - centimeter minimum
Cross Direction = 2.0 gram - centimeter minimum

7.1.5 Coefficient of Friction The static coefficient of friction of the finished ticket shall be:

Coefficient of Friction = 0.15 to 0.45

The kinetic coefficient of friction shall not be less than 75% of the static coefficient of friction.

7.1.6 Expansion and Contraction The maximum expansion and contraction with a change in relative humidity of from 20% to 75% or from 75% to 20% shall be less than:

In the grain direction 0.25%

In the cross grain direction 0.70%

7.2 Color The base material shall be white card stock, unless otherwise specified herein or by reference and approved.

7.3 Paper Opacity The minimum paper opacity shall be 80% as defined in TAPPI - T425 Opacity of Paper.

7.4 Curl The maximum curl of the tickets at equilibrium with any relative humidity between 20% and 75% shall not exceed the following values:

Axis of curl parallel to ticket length: 0.09 inch

Axis of curl perpendicular to ticket length: 0.10 inch

Axis of curl parallel to ticket diagonal: 0.10 inch

Figure 12 shows the various forms of curl.

7.5 Internal Tearing Resistance The minimum resistance to tear in each direction shall be 1,225 N (In common practice this value is equivalent to 125 gm).

Tearing resistance shall be determined by the method specified in ISO 1974.

7.6 Ash Content The ash content shall not exceed 8%,

The ash content shall be determined by the method specified in ISO/R 2144.

7.7 pH Value The pH obtained by the hot extraction method shall not be below 5.0.

Hydrogen ion concentration shall be determined by the method standardized by Technical Committee ISO/TC 6, Paper, board and pulps.

7.8 Writing Quality Writing quality shall be determined by the method standardized by Technical Committee ISO/TC 6, Paper Board and Pulps.

7.9 Smoothness (Roughness) The maximum roughness on the thermal side of the paper shall correspond to a reading of 75 Sheffield Units and the maximum roughness of the non-thermal side shall correspond to a reading of 125 Sheffield Units.

7.10 Abrasion Loss The loss of mass from each side of the paper shall not exceed 50 mg.

The abrasion loss shall be determined by the method standardized by Technical Committee ISO/TC 6, Paper Board and

Pulps.

7.11 Toxicity No part of the ticket shall be capable of causing bodily harm by absorption, inhalation, or ingestion.

7.12 Thermal Properties The ticket shall have the following thermal printing properties:

7.12.1 The thermal paper will have properties similar to FAX Grade 3 paper.

7.13 Location of Magnetic Stripe The stripe shall be located on the thermal print side.

7.14 Marking upon Abrasion The thermal surface shall not show any printing marks upon abrasion with a pointed metal stylus (with a point with radius of not less then 0.010 inches). The stylus shall be slid across the surface at a rate of not less than 10 inches per second.

7.15 Storage Temperature The ticket shall be suitable for storing in an environment as follows without any degradation of the thermal properties for a period of 1 (one) year:

Temperature: 32° F to 120° F

Humidity: 5% to 60% R.H.

III PHYSICAL CHARACTERISTICS

This section covers the physical characteristics of the base material for the tickets. The section is divided into separate chapters for the different types of tickets. The user of these specifications should chose the appropriate chapter relevant to the ticket type in use.

8.0 PHYSICAL CHARACTERISTICS

Definition of Sides: The ticket shall be defined as follows:

a. Front Side: Customer identification, magnetic stripe.

b. Back Side: ticket type identifier, terms and conditions (if any).

Refer to figure 13 for typical ticket.

8.1 Die Cut Tickets

The ticket shall meet the following requirements when conditioned at 50% +/- 2% relative humidity and 72° F +/- 3.5° F, unless otherwise noted.

8.1.1 Ticket Size The dimensions of the die cut ticket shall be as indicated in Figure 1.

8.1.2 Corners All corners shall be rounded to a nominal radius of 0.125 inch. The edge of the corner shall fall between the limits as indicated in Figure 1.

8.1.3 Ticket Edge and Sides The ticket edges shall be smooth and free from burrs and shall meet the straightness, squareness, and parallelism as indicated in Figure 1..

8.1.4 Grain The grain of the paper or plastic material shall be in the direction of the long dimension of the ticket.

8.1.5 Defects Tickets shall be free from defects which may cause excessive wear or interfere with the normal operation of processing equipment. Among these defects are: holes, (except for the orientation hole as specified), excessive dust, excessive fibers protruding from edges or surfaces of the ticket, residual chemicals, slime spots, other brittle areas and translucent spots which could cause reading errors in equipment.

8.1.6 Ticket Orientation Hole (If required) A round hole (0.125 +/- 0.010 inch diameter) may be punched in the ticket. It shall be located as shown in Figure 1.

8.2 Fan Fold Tickets

The ticket shall meet the following requirements when conditioned at 50% +/- 2% relative humidity and 72° F +/- 3.5° F, unless otherwise noted.

8.2.1 Ticket Size For those tickets which are to be used in a fan fold issue machine, the ticket width and fold line are shown in Figure 2.

8.2.2 Ticket Edge and Sides The ticket edges shall be smooth and free from burrs and shall meet the straightness, squareness, and parallelism as indicated in Figure 2.

8.2.3 Grain The grain of the paper or plastic material shall be in the direction of the long dimension of the ticket.

8.2.4 Defects The ticket shall be free of holes (except for the orientation hole as specified), electrically conducting particles, slime spots or other brittle areas and may not contain residual chemicals, fuzz or loose dust.

8.2.5 Top-of-Form marks TBD

8.2.6 Affixing new stacks of tickets New stacks of tickets will be affixed to old stacks using adhesive tape. There will be NO overlap of ticket stock.

8.2.7 Ticket Breaks There shall be no breaks in a stack of tickets. The minimum length supplied shall be 80% of the nominal length.

8.3 Ticket Roll Stock

The ticket shall meet the following requirements when conditioned at 50% +/- 2% relative humidity and 72° F +/- 3.5° F, unless otherwise noted.

8.3.1 Size The width dimensions of roll stock tickets, minimum and maximum diameters, and hub sizes shall be as shown on Figure 3.

8.3.2 Edge and Sides The ticket edges shall be smooth and free from burrs and shall meet the straightness, squareness, and parallelism as indicated on Figure 3.

8.3.3 Grain The grain of the paper or plastic material shall be in the direction of the long dimension of the ticket.

8.3.4 Defects The ticket shall be free of holes (except for the orientation hole as specified), electrically conducting particles, slime spots or other brittle areas and may not contain residual chemicals, fuzz or loose dust.

8.3.5 Hub Material The hub shall be made of either plastic or card. The plastic hub will conform to figure 11a or 11b for construction.

8.3.6 Hub Dimensions The hub shall have an internal dimension of 3.0" The hub shall conform to Figure 6.

8.3.7 Telescoping The roll of tickets will be flat (no telescoping) within 0.1" (See Figure 6)

8.3.8 Top-of-Form marks TBD

8.4 Tickets cut from Roll Stock with rounded corners

The tickets will conform to 8.3 above.

8.4.1 The outline of the tickets will be as shown in Figure 4

8.5 Perforations (non cutting) All perforations shall be suitable for rotary or knife edge bursting.

8.5.1 Strength All perforations shall require 8.18 kg to 10.91 kg (18 to 24 pounds) of pulling force per 25.4 mm (1 in.) of perforation to cause separation.

8.5.2 Orientation All perforations shall be produced from the magnetic stripe side of the ticket after the stripe is applied such that any protrusions reside on the side of the ticket opposite the magnetic stripe.

8.5.3 Protrusion No material shall be raised more than 0.025 mm (0.001 in.) above the surface of the ticket as a result of the perforations. There shall be no interlocking of perforations.

8.5.4 Folding Endurance Perforations shall endure a minimum of five double folds while retaining at least 10% of the original strength.

8.6 Roll Stock Nominal Capacities (Standard GFI plastic hub, paper with magnetic stripe)

The nominal number of tickets on a given roll, tickets are credit card size (3.375 in. long).

Outside Diameter of Ticket Roll	Ticket Stock Thickness .007"	Ticket Stock Thickness .008"	Ticket Stock Thickness .009"	Ticket Stock Thickness .010"
8.0"	1500	1250	1100	1000
9.0"	2000	1750	1600	1400
10.0"	2700	2300	2100	1850
10.5"	3000	2600	2300	2100
11.0"	3400	2900	2600	2400
11.5"	3700	3250	2900	2600
12.0"	4200	3600	3250	2900

NOTES:
1. Maximum outside diameter suitable for GFI equipment is 12 inches.
2. For GFI plastic hub dimensions refer to figures 11a and 11b. For card hub dimensions refer to figure 6.

8.7 Ticket Breaks There shall be no breaks in a roll of tickets. The minimum length supplied shall be 80% of the nominal length.

9.0 PHYSICAL CHARACTERISTICS OF MAGNETIC MATERIAL.

The magnetic material shall be manufactured from suitable pigments and oxides to achieve the required magnetic properties. The material may be applied either by direct slurry coating or by affixing tape as appropriate.

9.1 Location. The location of the magnetic material is on the front of the ticket as shown in Figures 1, 2, 3, and 4 depending on ticket type. The basic dimension from the ticket edge to the stripe centerline is 0.548 inch. (track 3 stripe location). The stripe shall be parallel to the long edge of the ticket.

9.2 Dimensions. The height of the reading surface above the card when profiled with a probe having a radius of between 0.015 in. and 0.100 in. shall be 0.0000 in. minimum and 0.0006 in maximum. A magnetic stripe with a nominal width of 0.250 inch for recording information shall be located on the ticket.

Surface Continuity: The outside surface of the magnetic stripe shall not extend more than 1000 micro-inches above the surface of an individual ticket. The outside surface of the magnetic stripe shall not be below the ticket surface. In addition, the average stripe height measured over a stack of 500 tickets shall not exceed 1000 micro-inches. These measurements shall be made according to the methods established in GFI Test Procedure 18295.

9.3 Surface Finish. The surface irregularity of the reading surface shall not exceed 55 microinches. centerline average in either the longitudinal or the transverse direction, using a cutoff wavelength of 0.01 in. or 0.03 in. when using a probe having a minimum radius of 100 micro-inches.

9.4 Surface Profile. The average profile of the minimum magnetic stripe width when measured parallel to the height of the card with a probe having a radius of 0.015 in. to 0.1000 in. shall not show a vertical deviation from a straight line connecting the minimum stripe width of more than 150 microinches for every 0.100 in. of stripe width. During the measurement, the back side of the card shall be held parallel to the reference surface by a 0.5 lb. load evenly distributed over the back of the measurement area. (See Figure 5)

9.5 Resistance to Abrasion. The magnetic material, after being abraded, shall be capable of producing readback signal amplitude over the abraded portion of the stripe that is no less than 50 percent of the peak readback signal before abrasion.

For polyester tickets the abrasion shall be carried out in a

Tabor Abraser type 5130 or equivalent.

The test card shall be flat in the fixture with a filler card of equal thickness so that the abrading wheels do nor bounce.

The wheels shall be CS-10F.

The load on each wheel shall be 500g.

The number of abrading wheel passes shall be 300 (150 complete cycles under 2 wheels).

The wheels shall be cleaned frequently, and at least between cards, to avoid clogging by materials removed from the stripe.

The encoded signals for this test shall be at 500 flux transitions per inch (ftpi) and shall be measured over the entire width of the encoded tracks.

For paper tickets the abrasion shall be tested as above. The number of abrading wheel passes shall be 100 (50 complete cycles under 2 wheels).

9.6 Resistance to Chemical Solutions. The magnetic material on the card, after being immersed in each of the chemical solutions for at least 100 continuous hours at room temperatures, shall be capable of producing peak readback signals that are no less than 90 percent of the peak readback signals measured before immersion. The encoded signals for this test shall be at 500 ftpi. Each immersion is a separate test and starts with a new specimen card. The chemical solutions are:

(1) Acetic Acid: Dilute 10 mL of concentrated glacial acetic acid with 90 mL of distilled water.

(2) Ammonium Hydroxide: Dilute 10 mL of concentrated ammonium hydroxide with 90 mL of distilled water.

(3) Artificial Perspiration - Acid: Dissolve 10g of sodium chloride, 1g of lactic acid (USP 85%), 1g of disodium hydrogen phosphate, and 0.25g of histadine monohydrochloride in distilled water to make 1000 mL of solution. Adjust to pH 3.5.

(4) Artificial Perspiration - Alkaline: Dissolve 10g of sodium chloride, 4g of ammonium carbonate (USP), 1g of disodium hydrogen phosphate, and 0.25g of histadine monohydrochloride in distilled water to make 1000 mL of solution. Adjust pH to 8.0.

It is recognized that this test is not applicable to paper based tickets.

9.7 Adhesion of Stripe to Card. The stripe shall not separate from the card under normal use or after the exposures specified in 9.5 and 9.6 without destruction.

9.8 Overlay Any overlay whether applied as a wet coating or applied as a premanufactured stripe shall be less than 10% of the shortest flux reversal to be encoded on the stripe

9.9 Submersion in Water The ticket shall be suitable for processing in the Automatic Fare Collection Equipment after being submerged in 120° F water and then dried.

IV MAGNETIC CHARACTERISTICS

10.0 MAGNETIC CHARACTERISTICS

10.1 Purpose The purpose of this guideline is to provide definitions of, and measurement protocols for, media magnetic parameters useful to manufacturers and users of magnetic stripe media and equipment.

10.2 Approach The approach taken in this guideline is to define "effective" parameters in terms of measurements which can be made directly on the finished media of interest, without damage to the media.

10.3 Reference To maintain maximum compatibility with existing standards, this guideline uses the existing ISO 7811/2 standard media (available from PTB) as the reference media in the definitions of the effective parameters, each of which is stated as a ratio of the parameter value for the test media to the parameter value for the ISO RM 7811/2 media.

10.4 Equipment All measurements under this guideline shall be made with a magnetic stripe reader/encoder equipped with a single combination read/write head. The test apparatus and test conditions shall comply with the following specifications:

10.4.1 The media speed shall be maintained constant (or be corrected to) within ± 0.5% for all measurements, and is recommended to be in the range of 7 to 10 inches per second (178 to 254 millimeters per second). The speed shall be recorded.

10.4.2 The read/write head shall have read/write windings at the same gap, and have a core saturation current at least 1.67 times the maximum write current used in the measurements.

10.4.3 The write width shall be a nominal 0.120 inch (3.05 mm), and a minimum 0.110 inch (2.79 mm). The read width shall be in the range of 0.040 to 0.065 inch (1.0 to 1.6 mm), and be centrally located with respect to the write width. The head gap length shall be in the range of 0.0005 to 0.0008 inch (0.012 to 0.021 mm). The azimuth error of the head/transport apparatus shall be no greater than 10 minutes of arc.

10.4.4 The head pressure shall be adjusted using the RM 7811/2 reference card such that a higher head pressure does not increase the read output voltage or decrease the noise measured. The head pressure shall be maintained constant for all sequences of measurement.

10.4.5 Read measurements shall be made with the media moving in the same direction as the write operation, and shall be taken on the same read pass. Except for the

Uniformity measurement in 10.8.3 all read measurements are the average peak-peak (amplified) read winding output voltage using equipment with a flat response (± 0.1 dB) for the signal frequencies measured, and a noise less than 0.5% of the RM 7811/2 Reference Card saturation read voltage. The average value shall be determined over the length of the card excluding 0.20 inch (5.08 mm) from either end of the stripe. All sequences of measurements shall be made on the same region of the stripe.

10.4.6 The write head winding shall have associated circuits to allow for adjustment and measurement of the write current. The rise time of the waveform shall be no greater than 5% of the minimum flux transition period to be encoded. Write current settings shall have an accuracy of ± 0.5%.

10.4.7 The environmental conditions for all measurements shall be 73 ± 5° F (23 ± 3° C) and 40% to 60% relative humidity.

10.4.8 All sequences of measurements shall be performed with the same test apparatus and under the same conditions.

10.5 **Symbols** The following symbols are used in this guideline:

Hc = Coercivity of RM 7811/2 Reference Card used in test measurements, in Oersteds, from the calibration certificate.

Hc* = Effective Coercivity of media magnetic stripe.

D* = Effective Dispersion of media magnetic stripe.

R* = Effective Resolution of media magnetic stripe.

U* = Effective Uniformity of media magnetic stripe.

Iw = Head write winding current during biphase encode operation.

Iw(1) = **Iw** for **Vr** = 0.90 **Vs** on Saturation Curve

Ie = Head write winding current during DC-erase operation.

Ie(1) = **Ie** for **Vr** = 0.90 **Vss** on DC-Erase Curve

Ie(2) = **Ie** for **Vr** = 0.10 **Vss** on DC-Erase Curve

Ie(3) = **Ie** for **Vr** = 0.03 **Vss** on DC-Erase Curve

Is = Head write winding current which produces saturation read voltage **Vs**.

Iss = Head write winding current which produces suprasaturation read voltage **Vss**.

Vr = Head read winding peak-peak output voltage during read operation.

Vr* = Effective Read Signal of media magnetic stripe.

Vs = Maximum value of **Vr**, i.e. saturation read voltage.

Vss = Value of **Vr** produced by **Iss**.

F = Encoding density used in the test measurements, i.e. bits per inch.

ΔV+ = The absolute difference between the highest value **V+(max)** and the lowest value **V-(min)** of individual positive peaks in the read output signal.

ΔV- = The absolute difference between the highest value **V-(max)** and the lowest value **V+(min)** of individual negative peaks in the read output signal.

10.6 Procedure The measurement procedure involves encoding and reading the magnetic stripe on the finished media in a manner analogous to its use in practice. Hence the data obtained, and the parameters calculated from that data, are representative of the performance of the magnetic stripe in normal use.

The procedure is based on the determination of a "Saturation Curve" and a "DC-Erase Curve" for the magnetic stripe.

10.6.1 Saturation Curve. Before each data point for the Saturation Curve is taken, the stripe is fully DC-erased using a write head current well above the stripe's saturation value. This eliminates magnetic history, assures that each datum is referenced to the same initial condition, and avoids the ambiguities of AC degaussing. The stripe is then written with all 0-bit biphase encoding, at the intended encoding density **F** in bits per inch, with a write current **Iw** and the corresponding read voltage **Vr** is measured. The procedure starts with low values of **Iw** (well below **Is**) and increases **Iw** in steps until **Vr** reaches a maximum and begins to fall with higher values of **Iw**. The Saturation Curve is a plot of the resulting **Vr** versus **Iw** data.

The Saturation Curve thus obtained represents the characteristics of the stripe as it changes from full saturated polarity in one direction to full saturated polarity in the opposite direction, which is the basis of biphase encoding. The Saturation Curve is used to obtain two characteristic values for the stripe: (1) The saturation read voltage **Vs**, i.e., the peak-to-peak read voltage for fully saturated biphase encoding; and (2) The write head current **Iw(1)** which produces a read voltage **Vr** equal to 90% of the saturation read voltage **Vs**. Both of these values are readily determined from the curve, whereas the saturation current **Is** is not.

10.6.2 DC-Erase Curve. The measurement procedure for the DC-Erase Curve is as follows: The stripe is fully DC-erased, and then written with all 0-bit biphase at a suprasaturation write current **Iss** equal to 1.6 times **Iw(1)**, i.e., at a write current 60% above that required to produce 90% of the saturation read voltage **Vs**. This procedure assures saturation while avoiding a significant amount of fringe field erasure. The suprasaturation read voltage **Vss** used in the parameter calculations is the value obtained for write current **Iss**. The thus encoded stripe is then subjected to a DC-erase current **Ie**, starting with a low value of current, and the residual voltage **Vr** is measured. This procedure is repeated in steps with increasing values of **Ie** until the residual read voltage **Vr** drops below the noise level (as determined by either the stripe or the measurement system). The DC-Erase Curve is a plot of the resulting **Vr** versus **Ie** data.

The DC-Erase Curve thus obtained again represents the characteristics of the stripe as it changes from full saturation in one direction to the other, essentially opposite to that for the Saturation Curve. However, the DC-Erase Curve is a more sensitive method for determining an effective "saturation" current for use in the calculation of Effective Coercivity. This current **Ie(3)** is taken as the DC-erase current required to reduce the read voltage to 3% of its suprasaturation value **Vss**. Two other characteristic values of the stripe are also obtained from the DC-Erase Curve, namely the DC-erase currents required to reduce the read voltage to 90% and 10% of its suprasaturation value **Vss**, denoted **Ie(1)** and **Ie(2)** respectively. These values are used to calculate the Effective Dispersion **(D*)** for the stripe.

10.6.3 Resolution The stripe is again fully DC-erased, and then written with all 1-bit biphase encoding at the write current **Iss**. The measured suprasaturation read voltage **Vss(2F)** is used with **Vss(F)** as determined above

to calculate the Effective Resolution (R*) of the stripe.

10.6.4 Uniformity The measurement procedure for the remaining characteristic of stripe uniformity requires measurement of the maximum, minimum, and average values of the suprasaturation read voltage **Vss(2F)** for all 1-bit encoding, at different regions along the stripe, as described in the protocol below.

The above measurement procedure is applicable to any biphase encoding density **F**, in bits per inch, for which the stripe is intended to be used. For comparative purposes, it is recommended that the measurements be made for the two ISO standard densities of 75 and 210 bits per inch.

10.7 Definition

10.7.1 Effective Coercivity Hc*

$$Hc^* = \frac{Ie(3) \text{ for test media}}{Ie(3) \text{ for RM 7811/2}} \times Hc \text{ Oersted}$$

Hc* represents an extrapolation from the current ISO standard RM 7811/2 media, which has a nominal coercivity **Hc** = 283 oersteds, to any other coercivity. **Hc*** is thus the "effective coercivity" of the finished media. This is meaningful to and readily determinable by the manufacturers and users of magnetic stripe media and equipment, over the entire range of 275 to 4000 oersteds in current use.

10.7.2 Effective Read Signal Vr*

$$Vr^* = \frac{Vss \text{ for test media}}{Vss \text{ for RM 7811/2}}$$

Vr* represents the read output voltage of properly encoded finished media, referenced to the saturation read voltage for the ISO RM 7811/2 media (**Vr*** = 1).

10.7.3 Effective Resolution R*

$$R^* = \frac{Vss(2F)/Vss(F) \text{ for test media}}{Vss(2F)/Vss(F) \text{ for RM 7811/2}}$$

R* represents the ability of the media to encode biphase data at a given data density **F**, referenced to the resolution for the ISO standard RM 7811/2 media (**R*** = 1) at that density.

10.7.4 Effective Dispersion D*

$$D^* = \frac{Ie(1)/Ie(2) \text{ for test media}}{}$$

Ie(1)/Ie(2) for RM 7811/2

D* represents an effective measure of the dispersion in the chemical purity, grind, and orientation of the magnetic pigment in the finished magnetic stripe. This characteristic affects the quality of an encoded flux reversal and the immunity to inadvertent magnetic damage. The dispersion for any media is referenced to that for ISO RM 7811/2 standard media (D* = 1).

10.7.5 Effective Uniformity U*

$$U^* = \frac{U \text{ for test media}}{U \text{ for RM 7811/2}}$$

where $$U = \frac{\Delta V+(2F) + \Delta V-(2F)}{Vss(2F)}$$

U represents the worst case of local difference between maximum and minimum read voltages, referenced to the average read voltage, which is a measure of media uniformity in the read signal for constant encoding. The uniformity for any media is referenced to that for ISO RM 7811/2 standard media (U* = 1).

10.8 Protocol The measurement protocol given below applies to both the ISO RM 7811/2 Standard Reference Card and the magnetic stripe media being tested.

10.8.1 Media Saturation Curve

1. DC-erase the full length of the magnetic stripe. It is recommended that the maximum permissible test equipment write head current be used for this operation, which must be sufficient to fully saturate the stripe.

2. Write the stripe with a pattern of all 0-bit biphase (zeros) using an encode current of Iw, where Iw is substantially below the encode current required to saturate the stripe.

3. Measure the resulting read voltage Vr.

4. Repeat steps #1, #2, #3 with increasing values of Iw until Vr reaches a maximum and begins to decrease with increasing values of Iw.

5. The Media Saturation Curve is a plot of Vr versus Iw.

6. Determine Vs, which is the maximum (sustained) value of Vr, from the curve.

7. Determine **Iw(1)**, which is the value of **Iw** for **Vr** = 0.90 **Vs**, from the curve.

10.8.2 Media DC-Erase Curve

1. DC-erase the stripe.
2. Write the stripe with all 0-bit biphase using an encode current of **Iss** = 1.6 **Iw(1)**.
3. Measure the resulting read voltage **Vss(F)**.
4. Partially DC-erase the stripe, starting with a low value of erase current **Ie**.
5. Measure the resulting read voltage **Vr**.
6. Repeat Steps #1 - #5 with increasing values of **Ie** until **Vr** reaches the noise level of the media/equipment.
7. The Media DC-Erase Curve is a plot of **Vr** versus **Ie**.
8. Determine the values of **Ie(1)**, **Ie(2)**, and **Ie(3)** from the curve.

10.8.3 Media Resolution & Uniformity

1. DC-erase the stripe.
2. Write the stripe with all 1-bit biphase using an encode current of **Iss** = 1.60 **Iw(1)**.
3. Measure the resulting read voltage **Vss(2F)**. This value is used with **Vss(F)** from 10.8.2 to calculate the media resolution.
4. Determine the highest and lowest values of the individual positive peaks (**V+**) and the highest and lowest values of the individual negative peaks (**V-**) in the read signal output over the media test length used to measure the (average) value **Vss(2F)**. These values determine **ΔV+** and **ΔV-** for calculation of media uniformity.

10.8.4 Media Effective Parameters

1. Complete the above protocol measurements 10.8.1 - 10.8.3 for the ISO RM 7811/2 Standard reference card and for the media under test.

2. Calculate the values of the effective parameters **Hc***, **Vr***, **R***, **D***, and **U*** using the definitions given in 10.7.0.

Table 1. Typical Values of Parameters. The following are suggested ranges for the parameters previously defined.

Effective Coercivity (Hc*)	Effective Dispersion (D*)	Effective Read Signal (Vr*)	Effective Resolution (R*)	Magnetic Uniformity (U*)
300	.8 - .83	1 - 1.2	.8-1 plastic .7-1 paper	.9 - 1.1
600	.8 - .83	1 - 1.2	.8-1 plastic .7-1 paper	.9 - 1.1
1750	.8 - .83	1 - 1.2	.8-1 plastic .7-1 paper	.9 - 1.1
2750	.8 - .83	1 - 1.2	.8-1 plastic .7-1 paper	.9 - 1.1
3600	.8 - .83	1 - 1.2	.8-1 plastic .7-1 paper	.9 - 1.1

10.9 Pulse Width The readback pulse width of a new ticket, which has been recorded and read back, shall be within +/- 35% of the calibration signal pulse width derived from the ISO RM 7811/2 standard media.

10.10 Noise The peak amplitude of any noise pulse along a saturation erased ticket shall not exceed 2% of the calibration signal level derived from the ISO RM 7811/2 standard media. The pulses occurring during the leading and trailing 1/8" of the stripe may be excluded.

10.11 Jitter The stripe will exhibit no more jitter than the standard 7811/2 card in both forward and reverse read. Total jitter shall be no more than 6% bit to bit.

Jitter is defined as: $\frac{a - b}{a} \leq 6\%$

where a and b are the bit lengths of successive bits (zeros).

10.12 Environment. The standard environment for signal amplitude measurements is 73° F +/- 5° F and 40 percent to 60 percent relative humidity. When tested under otherwise identical conditions, the readback signal amplitude from the magnetic stripe shall not deviate from its value in the standard environment by more than 15 percent after 5 minutes of card exposure over the range, as follows:

Temperature:	-30° F to +122° F
Relative Humidity:	5 percent to 95 percent with a maximum wet bulb temperature of 77° F

11.0 ENCODING SPECIFICATIONS.

11.1 Location of Encoded Data - CR80 Size Cards The data shall be encoded in an area extending between two lines that are 0.353 in. and 0.643 in. from the edge of the card.

Data shall be arranged as given in 11.1.1, 11.1.2, and 11.1.3 and shall begin in sequence from the right hand side of the card as viewed from the front with the encoded track at the bottom.

11.1.1 The centerline of the first data bit (start sentinel) is 0.293 in. +/- 0.020 in. from the right edge of the card.

11.1.2 When the data is re-encoded in a terminal, the centerline of the first encoded data bit in the start sentinel may be located 0.293 in +/- 0.040 in. from the right edge of the card.

11.1.3 The lead-in up to the first data bit (start sentinel) shall be clocking bits (ZEROs), and the distance from the last data bit (longitudinal redundancy check (LRC) character) to the end shall also be clocking bits.

NOTE: It is recognized that zeros prior to 0.125 in. or after 3.250 in. from the right edge of the card when viewed from the back may not meet specification; however, nothing other than intended zeros should be encoded in this area.

11.2 Location of Encoded Data - Other size cards The data shall be encoded in an area as shown in Figure 7 or as agreed.

Data shall be arranged as given in 11.2.1, 11.2.2, and 11.2.3 and shall begin in sequence from the right hand side of the card as viewed from the front with the encoded track at the bottom.

11.2.1 The centerline of the first data bit (start sentinel) is 0.293 in. +/- 0.020 in. from the right edge of the card.

11.2.2 When the data is re-encoded in a terminal, the centerline of the first encoded data bit in the start sentinel may be located 0.293 in +/- 0.040 in. from the right edge of the card.

11.2.3 The lead-in up to the first data bit (start sentinel) shall be clocking bits (ZEROs), and the distance from the last data bit (longitudinal redundancy check (LRC) character) to the end shall also be clocking bits.

NOTE: It is recognized that zeros within 0.125 in. of either end of the card when viewed from the back may not meet specification; however, nothing other than intended zeros should be encoded in this area.

11.3 Encoding Technique. (see Figure 8). The encoding technique is known as two-frequency, coherent phase recording. This method allows for serial recording of self-clocking data (on one channel).

The data is comprised of data bits and clocking bits together. An intermediate flux transition occurring between clocking transitions signifies a ONE; the absence of an intermediate flux transition signifies a ZERO.

Flux transitions are, for the purpose of this document, defined as the locations of the maxima of the magnitude of the magnetic flux density component normal to the surface of the magnetic stripe.

The data shall be recorded as a synchronous sequence of characters without intervening gaps.

Recording shall be in a saturation mode with magnetization parallel to a line in the plane of the track. The direction is determined by the recording angle.

11.4 Angle of Recording. (see Figure 9). The signal shall be recorded in such a way that the maximum playback amplitude will occur when the magnetic centerline along the head gap is at an angle of 0° +/- 20 mins. to a line normal to the top edge of the card.

11.5 Bit Density. The average bit density of the recorded signal shall be 120 bits/in. (+/- 3 percent) when measured along the line parallel to the top reference edge of the card. The spacing between adjacent flux changes shall be 0.008333 in. +/- 0.00025 in.(+/- 3 percent) for a ZERO and 0.004167 in. +/-0.000167 in.(+/- 4 percent) for each interval of a ONE. For a sequence of recorded ONEs, the density corresponds to a nominal 240 ftpi.

It is recognized that other densities may be used in the range of 40 to 210 bits per inch.

11.6 Coded Character Set. The character code, which is numeric only, shall be a binary coded decimal (BCD) 4-bit subset with odd parity. The following special meanings shall be attached to the following characters:

11 Start Sentinel
13 Data Separator
15 End Sentinel

11.7 Bit Configuration. When viewing the card from the back, with the magnetic stripe at the top of the card, the rightmost bit of each character is defined as the least significant bit (b_1). The significance decreases to the left through the leftmost position, which is defined as the parity bit (b_p).

11.8 Error Detection. Two techniques of error detection, as described below, shall be encoded. In both techniques, the clocking bits recorded at the ends of the data message are used for synchronization and shall not be regarded as data characters.

11.10.1 Parity. A parity bit for all encoded characters shall be used. The value of the parity bit is defined such that the total quantity of ONE bits recorded, for a character, including the parity bit, shall be odd.

11.10.2 Longitudinal Redundancy Check. A longitudinal redundancy check (LRC) character shall appear for each data message. The LRC character shall be encoded so that it immediately follows the end sentinel when the card is read in a direction giving the start sentinel first, followed by data and the end sentinel. The bit configuration of the LRC character shall be identical to the bit configuration of the data characters.

The LRC character shall be calculated with the following procedure:

(1) The value of each bit in the LRC character, excluding the parity bit, is defined such that the total count of ONE bits encoded in the corresponding bit location of all characters of the data message, including the start sentinel, data, end sentinel, and LRC characters shall be even.

(2) The LRC characters parity bit is not a parity bit for the individual parity bits of the data message, but is only the parity bit for the LRC character encoded as described in 11.10.1.

11.9 Number of Tracks Only one track of data shall be encoded on the card.

11.10 Other Encoding Methods Consult GFI for encoding methods other than the one specified above.

V MISCELLANEOUS

12.0 SAFETY

12.1 Toxicity No comment of the ticket shall be capable of causing bodily harm by contact, inhalation or ingestion in the course of normal usage.

12.2 Flammability The ticket shall be self-extinguishing in a still carbon dioxide atmosphere.

13.0 PRINTING

13.1 General Several different types of printing, as described below, may be associated with the ticket.

In all cases, the printing shall be legible, without excess ink, and cause no embossment or distortion of the ticket. The ink shall be non-conductive, non-abrasive, non-magnetic, and non-blocking when dry. In addition, it shall not transfer to patrons hands or clothing, other tickets, feed rolls, picker knives, or other machine components and shall not easily smudge or smear when handled in environments specified in Section 14.1 of this specification.

13.2 Standard Ink Printing All non-magnetic and non-optical sense ink shall be referred to as colored print. The colored print ink shall balance the requirements for security and the problems created by offsetting onto the mechanical components of the ticket handling equipment.

13.3 Signature Space (Optional) The signature surface of the ticket shall accept ink or pencil.

13.4 Current Value Space (Optional)

13.4.1 Current Value Format (Optional)

13.5 Thermal Printing Panel (Optional)

13.6 Production Run Identification Each ticket shall include a mark identifying the production run in which the ticket was made.

13.7 Ink Adhesion During the printing process random samples of the cards shall be taken and a clean white cloth shall be rubbed on the card. No ink shall be removed from the cards.

13.8 Optical Sense Print All print which is to be sensed or ready by an optical scanning device must produce a PCS reading of 80% minimum across a spectral range of 600 nm to 900 nm and a maximum reflectance of 18%.

Any printed marks employed for machine sensing of ticket location shall be located on the front (nonmagnetic side) of the ticket.

13.9 Registration Registration is the relationship of the various component characteristics of the ticket to one another.

13.9.1 Print to Print Variations in the placement of press applied printing shall not exceed +/- 0.51 mm (0.020 in.) from a single point of reference on the document.

13.9.2 Print to Cut Variation in the location of press applied printing relative to the document edge shall not exceed +/- 0.51 mm (0.020 in.) variation.

13.9.3 Perforation To Cut Registration Variation in the location of perforations relative to the location of the measurement reference shall not exceed +/- 0.51 mm (0.020 in.).

13.10 Thermal Transfer Printing All thermal transfer printing hall employ ribbons which "bond" with the substrate material to form a durable, scratch resistant finish.

14.0 TICKET HANDLING CHARACTERISTICS

These characteristics shall be measured according to the procedures contained in GFI Test Procedure 18295.

14.1 Ticket Reliability The essential characteristic of tickets is that they shall work reliably with the Fare Collection Equipment as specified.

The tickets are used in two distinct types of equipment: original issue equipment such as encoding machine and vending machines, where the ticket stock is new and unused and is used just once in the process of creating and/or issuing the ticket.

The second type of equipment are those machines on buses, stations and other locations which receive the previously encoded ticket and process it for validity and other conditions of use. It is this second type which requires sustained performance by the ticket relative to use by the patron or customer.

Provided that these tickets are not mutilated or abused by patrons beyond those environmental specifications contained herein.

The paper ticket shall be suitable for use by a patron in GFI equipment not less than 60 times, with a design life of not less than 100 times.

The triplex ticket shall be suitable for use by a patron in GFI equipment not less than 200 times, with a design life of not less than 500 times.

The plastic ticket shall be suitable for use by a patron not less than 500 times, with a design life of not less than 1,000 times.

14.2 Folding The paper ticket shall be suitable for processing in Equipment (other than encoding and vending machines) after being folded into four parts and then unfolded according to the methods outlined in the test procedure. The plastic ticket shall not be required to function in any equipment subsequent to being folded.

14.3 Wetness/Moisture The ticket shall be suitable for use after it has been submerged in water for 5 seconds, withdrawn and patted dry.

14.4 Magnetic Exposure The readback signal level of a ticket shall not be degraded by more than 1% when subjected to magnetic fields of up to and including 50 gauss.

14.5 Magnetic Stripe Strength The adhesion of the magnetic stripe to the ticket shall be adequate to ensure that the stripe will not separate from the ticket upon the environmental, processing and lifetime conditions defined in this specification. This is essential to provide a means of fraud control.

14.6 Workmanship As delivered, the tickets shall contain no cracks, bends, breaks, attached parts, ink smears, or other defects that could render the ticket unsuitable for the intended purpose. The tickets shall be clean and free of dirt and other foreign material.

15.0 TICKET ENVIRONMENT

15.1 Ticket - Machine Environment The tickets shall be usable for a period of at least one year after being loaded into a hopper or printer of any AFC machine, within the following conditions:

Temperature: Minimum = 32° F Maximum = 120° F

Humidity: Minimum = 5% R.H. Maximum = 60% R.H.

Wet Bulb = 83° F Maximum

15.2 Blocking Blocking of tickets due to storage shall be removed by lightly fanning the tickets when they are loaded into AFC Equipment. Such blocking and/or fanning shall cause no damage to the tickets, and blocking shall not recur in AFC Equipment in normal use.

"Non-blocking" shall be defined as:

No adhesion between contiguous surfaces, which slide freely upon one another. Surfaces of specimens are not marred in sliding

15.3 Ticket Handling For the purpose of ticket processing, it is recommended to fan individual tickets lightly before passing them through machines.

16.0 PACKING AND SHIPPING

16.1 Packing This will depend on individual applications but as a guide, for 0.010 inch tickets the following shall apply.

16.1.1 Die Cut Tickets Packed in boxes of 1000 tickets per box. Each box shall have a label indicating the type of ticket and the lot number. Where tickets are consecutively numbered, the label shall show the beginning and ending numbers. The box shall be encased in a shrink wrap covering for security and environmental control.

16.1.2 Roll Tickets Each roll shall be wound on a hub as shown on Figure 6. The leading edge shall have a leader for purposes of threading the roll through a issuing device. Each roll shall be packed in a shrink wrap bag. A label shall be inserted in this bag indicating the ticket type and lot number. Where the tickets are consecutively numbered, the label shall also include the beginning and ending numbers.

16.1.3 Fan Fold Tickets Packed in boxes of 1000 tickets per box. Each box shall have a label indicating the type of ticket and the lot number. Where tickets are consecutively numbered, the label shall show the beginning and ending numbers. The box shall be encased in a shrink wrap covering for security and environmental control.

16.1.4 Thermal Tickets Packed in slugs of 200 tickets. Each slug will have a paper band around the long axis of the slug. The paper band will be individually serialized. The band will be fastened with glue or adhesive tape on one end of the slug as shown in figure 10. No glue will be allowed to touch the tickets.

NOTE: Alternatives to shrink wrapping will be allowed. The purpose is to increase security and provide environmental control for the tickets.

16.2 Shipping

All tickets shall be shipped to GFI only via United Parcel Service, Federal Express or by other approved carrier where shipments are fully registered and trackable.

17.0 SPECIAL TICKETS

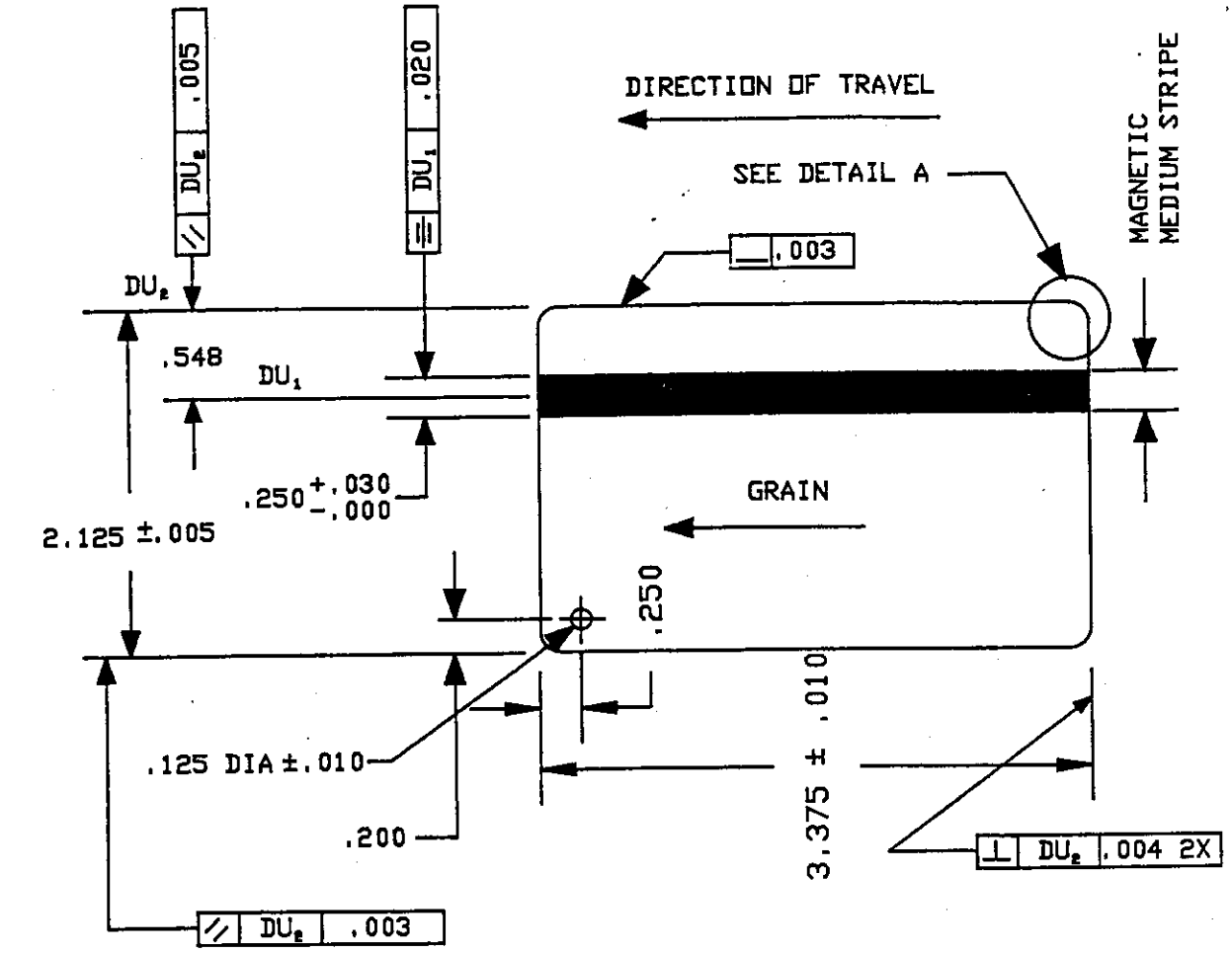
20.0 SAMPLE SPECIFICATION CONFIGURATIONS

The following configurations of cards show how certain sections of this document apply to the specification of the ticket.

Polyester, credit card sized, die cut individual ticket	Section I Section II - 5 Section III - 8.1 Section IV Section V
Triplex, credit card sized, roll stock with rounded corners	Section I Section II - 4 Section III - 8.4 Section IV Section V

21.0 LIST OF FIGURES

Figure	Description
1.	Die Cut Ticket Dimensions
2.	Fan Fold Ticket Dimensions
3.	Roll Stock Ticket Dimensions (credit card size)
4.	Die Cut Roll Stock Ticket Dimensions
5.	Surface Profile
6.	Ticket Roll Dimensions (including Card Hub)
7.	Roll Stock Ticket Dimensions (small ticket size)
8.	F2F Encoding example
9.	Angle of Recording
10.	Thermal Ticket Slug
11a & b	Plastic Hub Dimensions
12.	Card Curl
13.	Typical Card Layout



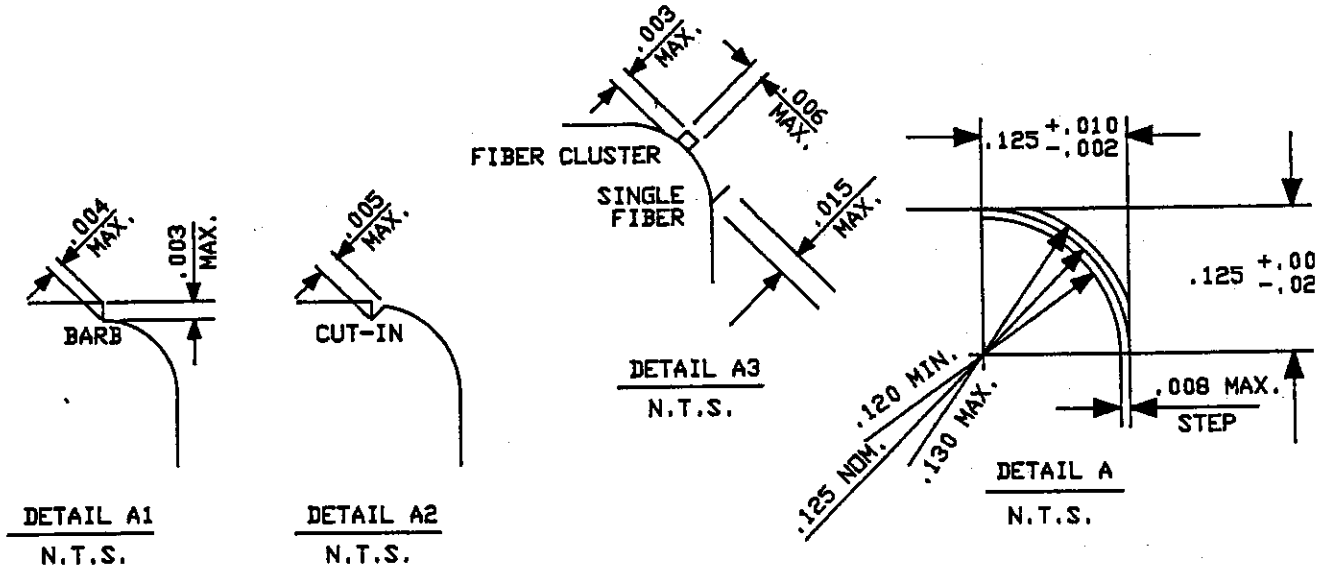


FIGURE 1

DIE CUT TICKET DIMENSIONS

GFI GENERAL FAREBOX
A UNIT OF GENERAL SIGNAL

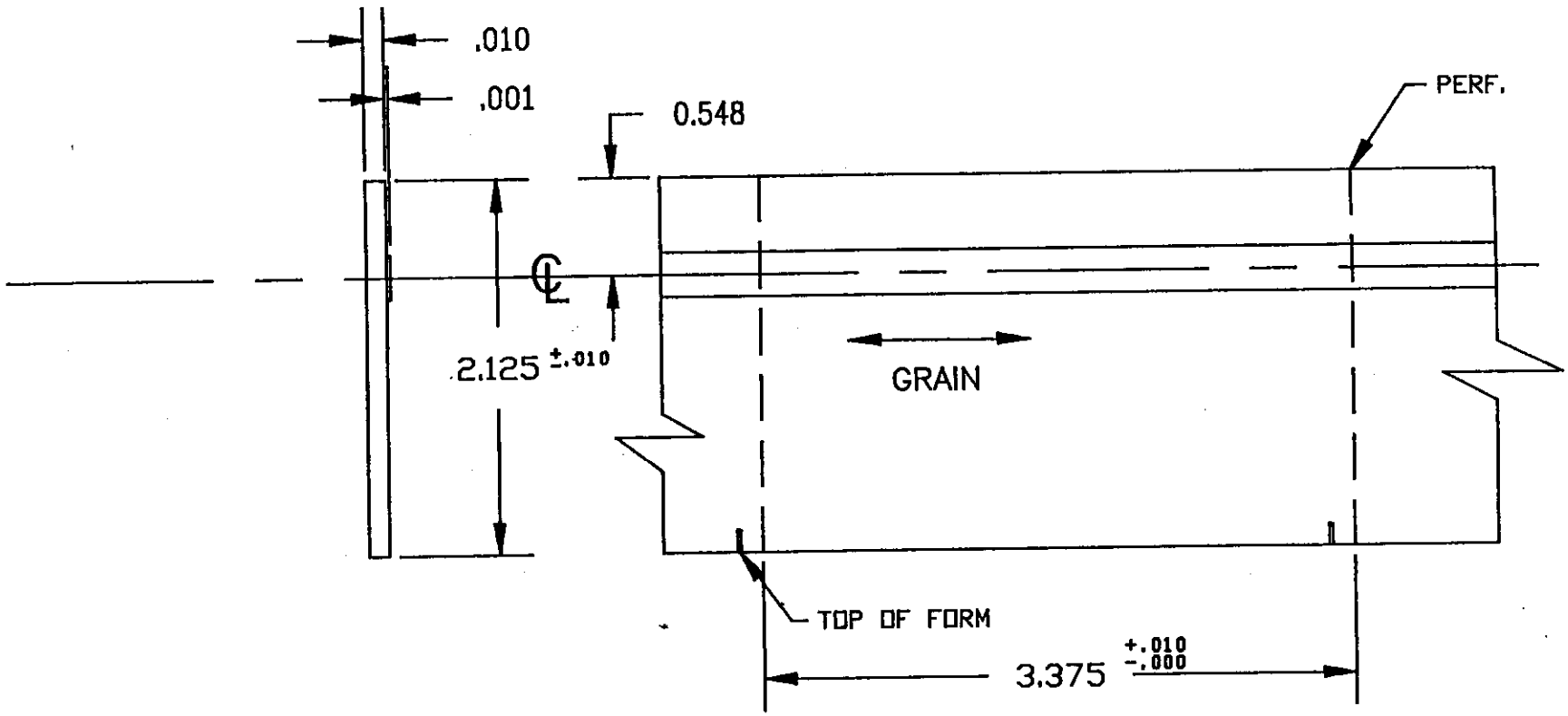


FIGURE 2

FAN FOLD TICKET DIMENSIONS

GFI GENERAL FAREBOX
A UNIT OF GENERAL SIGNAL

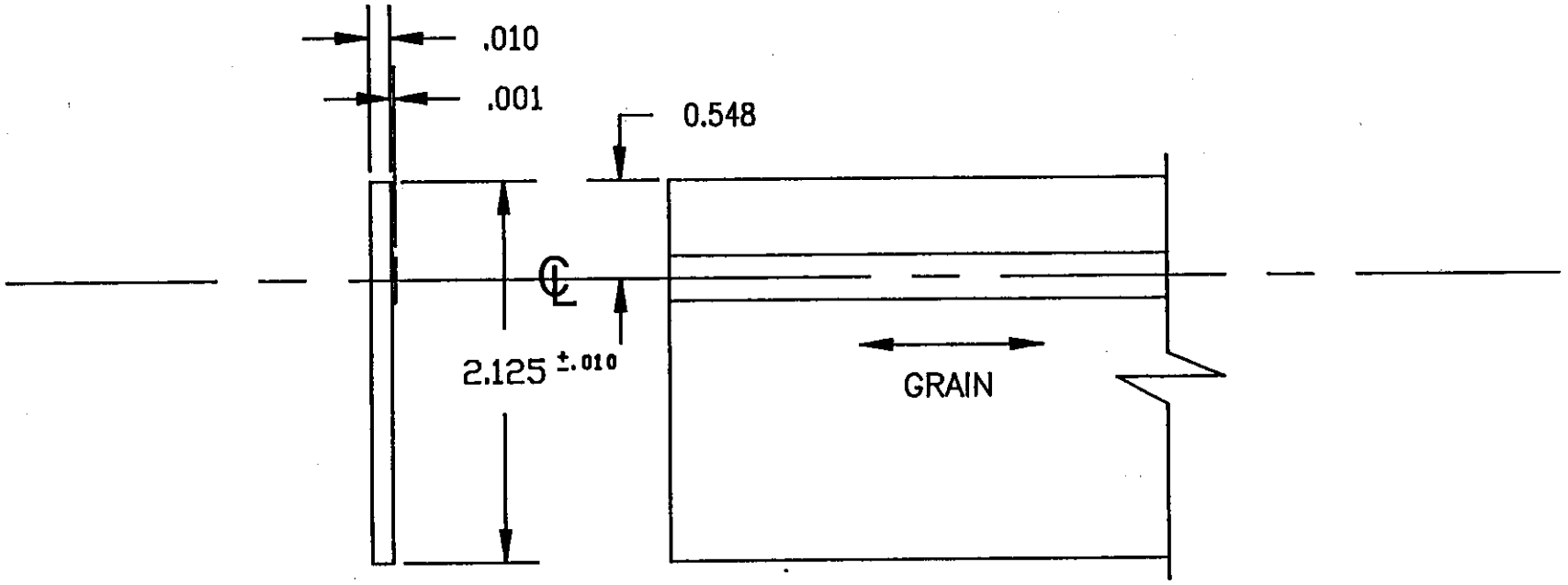


FIGURE 3

ROLL STOCK TICKET DIMENSIONS

GFI GENERAL FAREBOX
A UNIT OF GENERAL SIGNAL

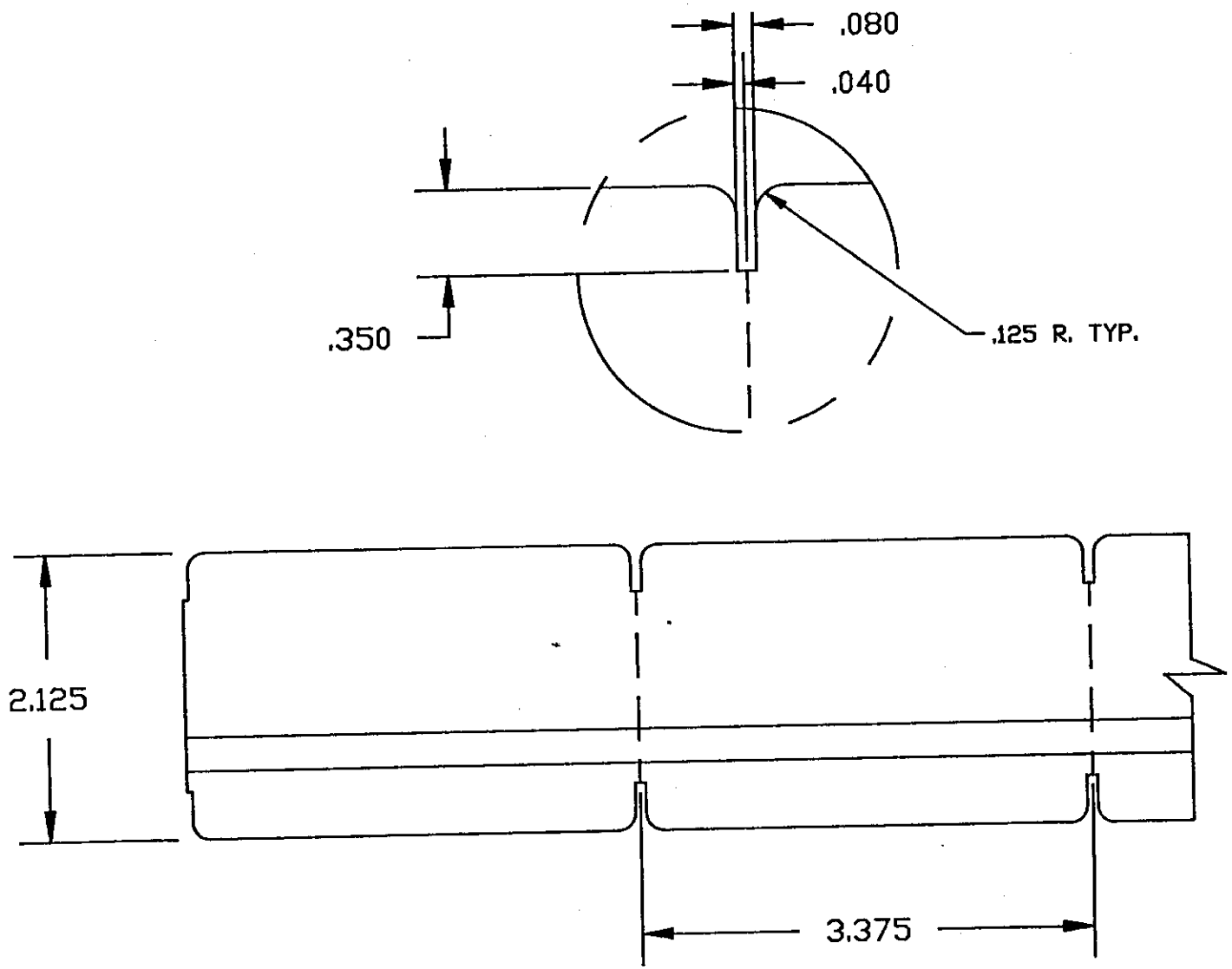
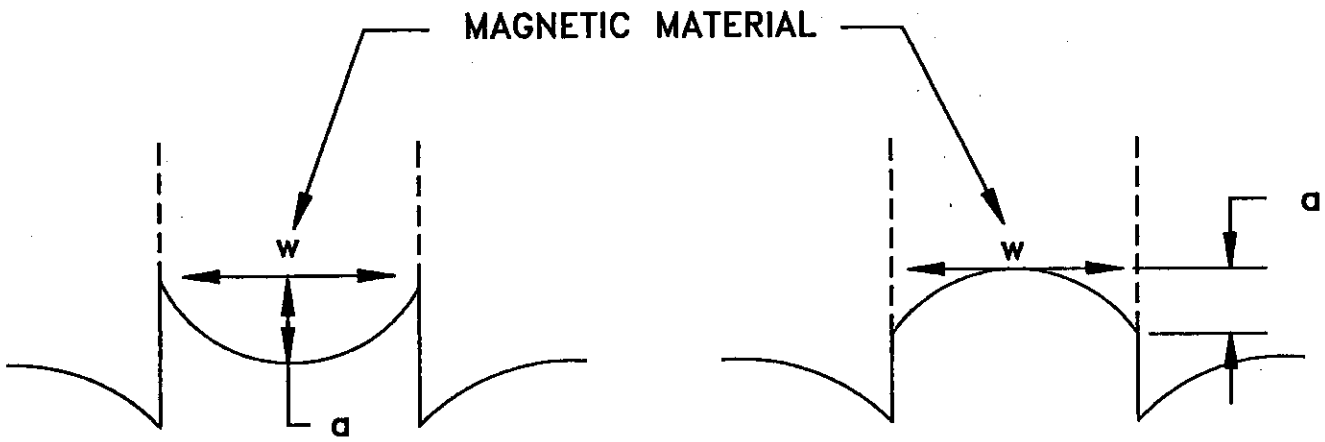


FIGURE 4

DIE CUT ROLL STOCK
TICKET DIMENSIONS

GFI GENERAL FAREBOX
A UNIT OF GENERAL SIGNAL

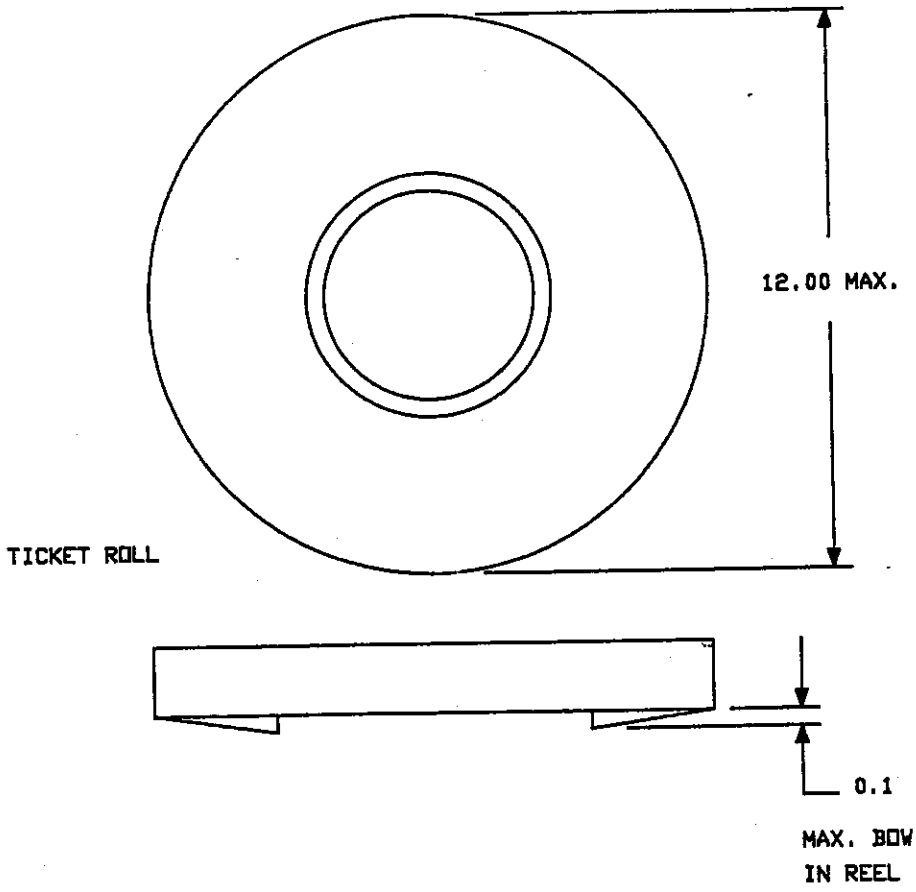


when: w=minimum stripe width

$a \leq 150(w/0.1)$ MIN.

FIGURE 5

SURFACE PROFILE



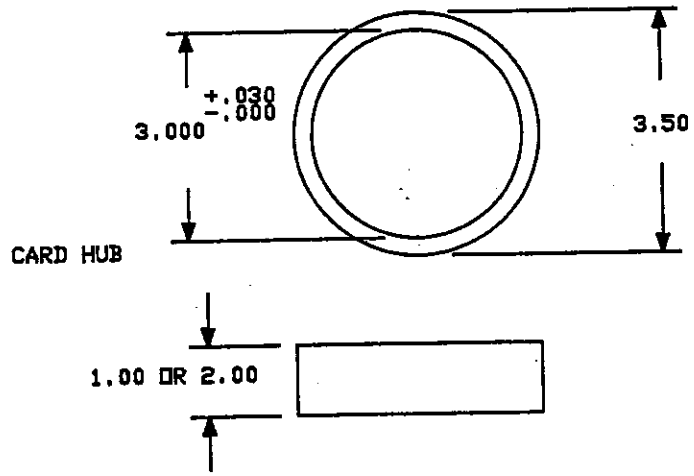


FIGURE 6

TICKET ROLL DIMENSIONS

GFI GENERAL FAREBOX
A UNIT OF GENERAL SIGNAL

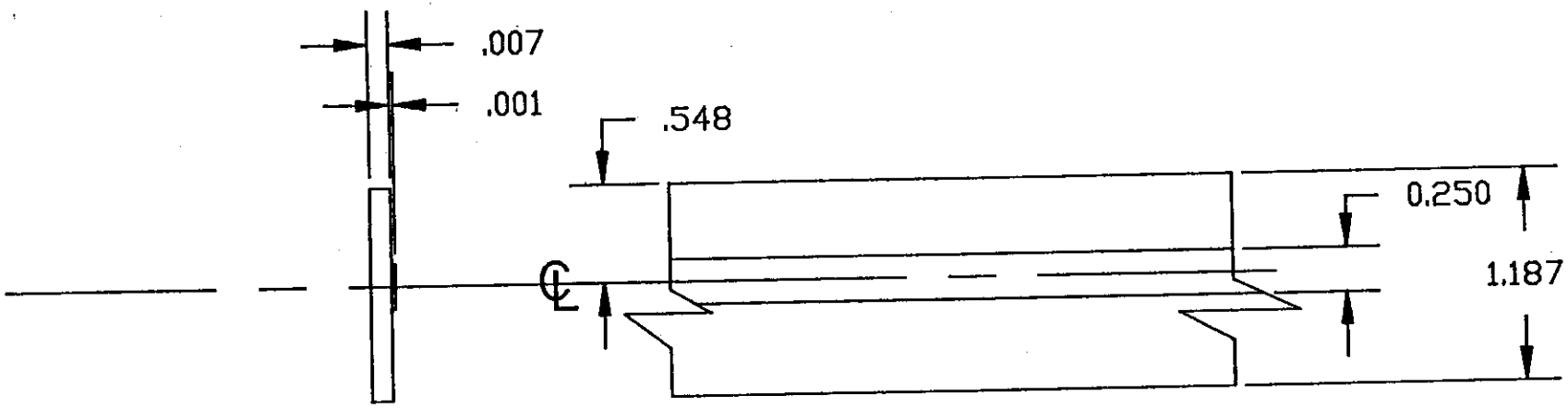


FIGURE 7

ROLL STOCK TICKET DIMENSIONS
(SMALL SIZE)

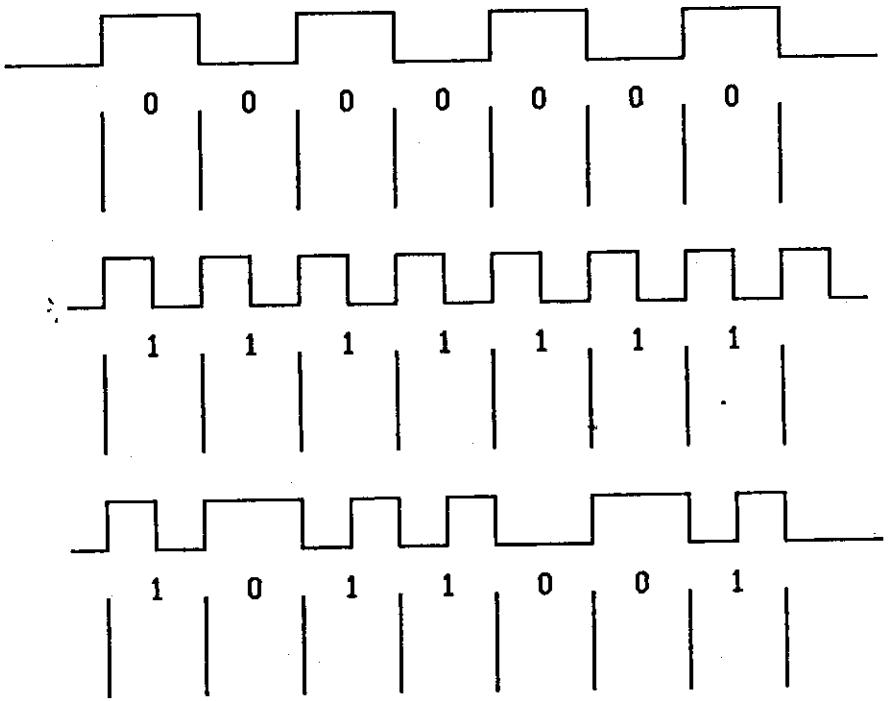


FIGURE 8

EXAMPLE OF TWO FREQUENCY, COHERENT PHASE (F2F) ENCODING

GFI GENERAL FAREBOX
A UNIT OF GENERAL SIGNAL

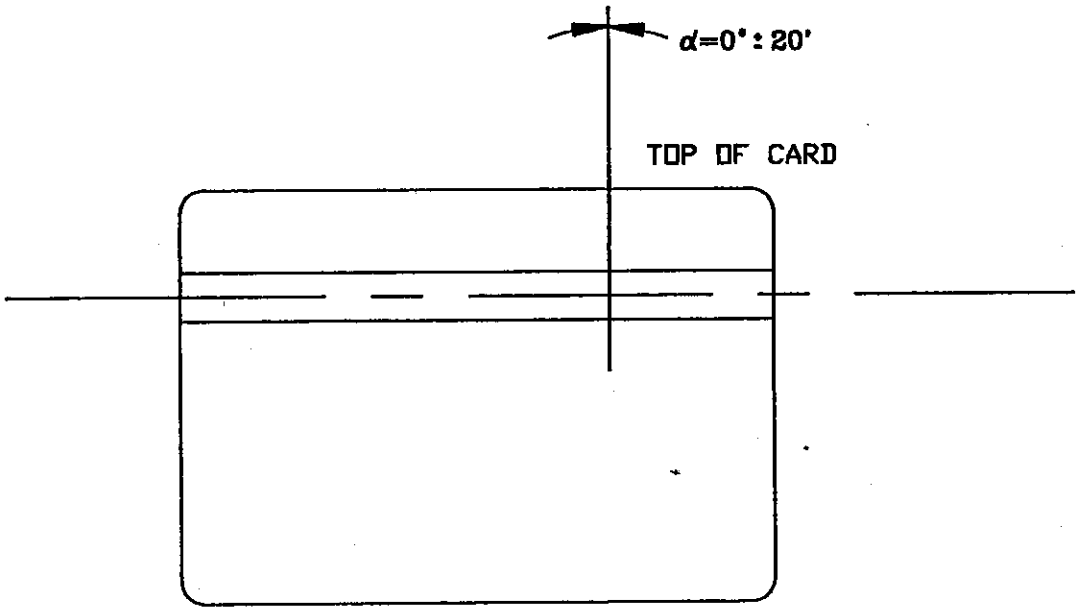


FIGURE 9

ANGLE OF RECORDING

GFI GENERAL FAREBOX
A UNIT OF GENERAL SIGNAL

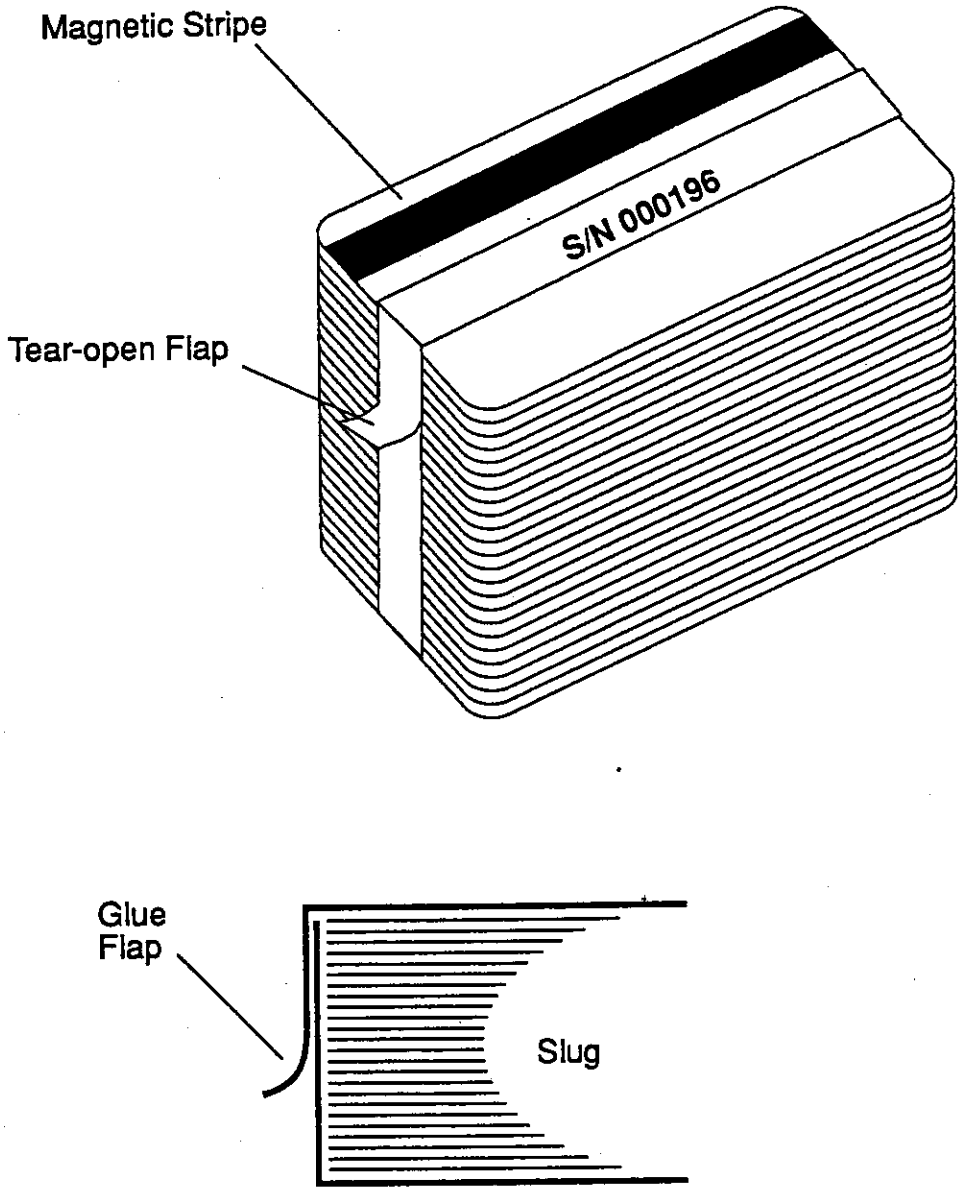
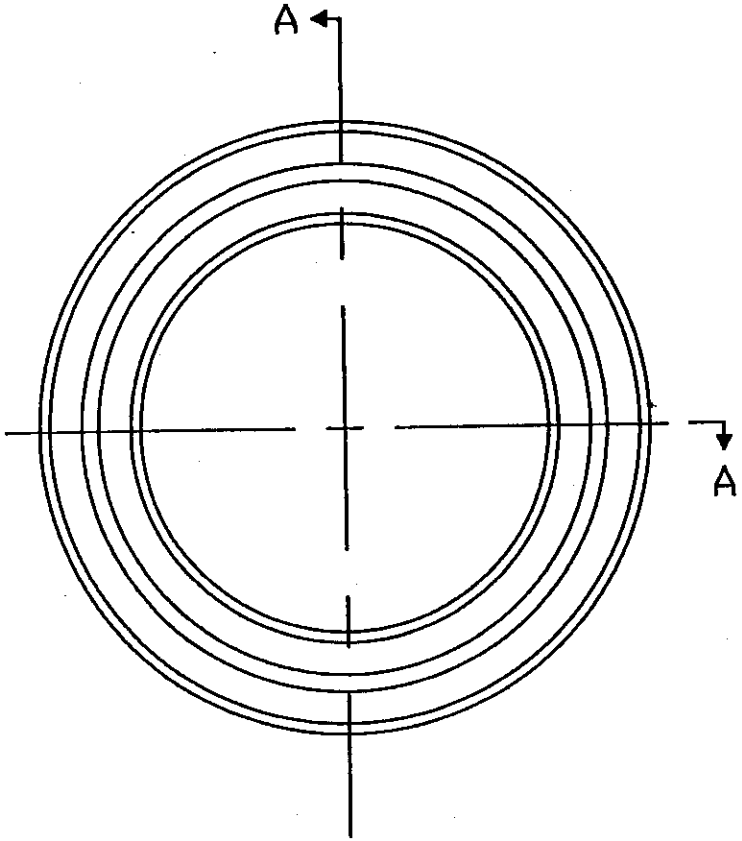


Figure 10 — Thermal Ticket Slug



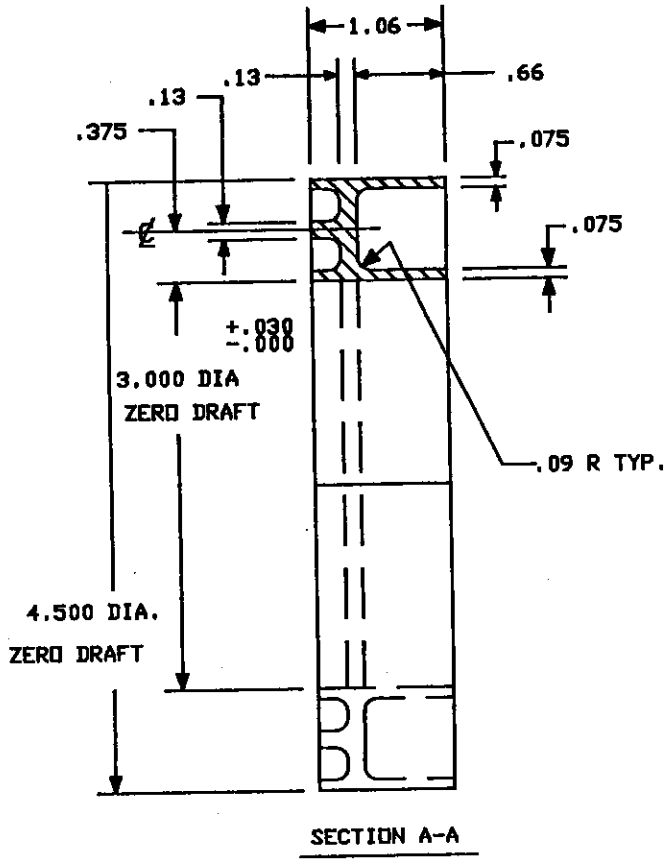
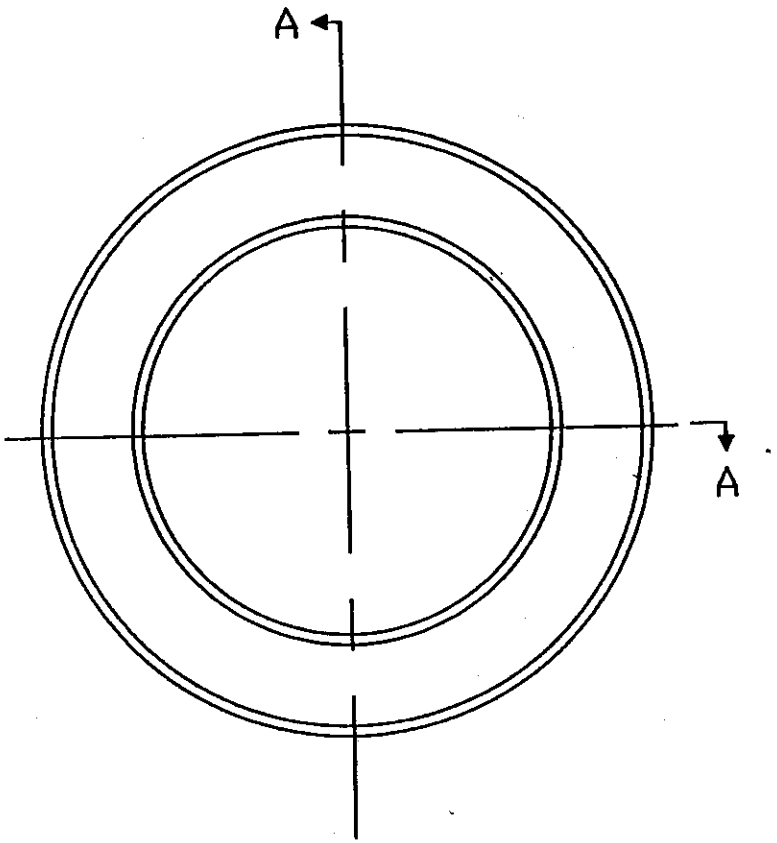
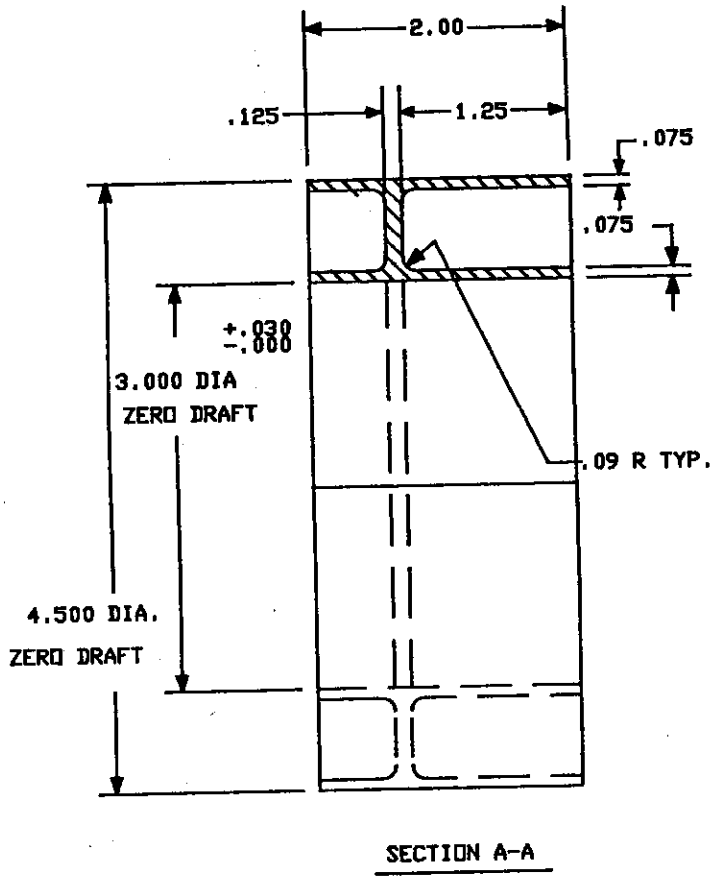


FIGURE 11a

PLASTIC HUB DIMENSIONS

GFI GENERAL FAREBOX
A UNIT OF GENERAL SIGNAL





GFI GENERAL FAREBOX
A UNIT OF GENERAL SIGNAL

FIGURE 11b

PLASTIC HUB DIMENSIONS

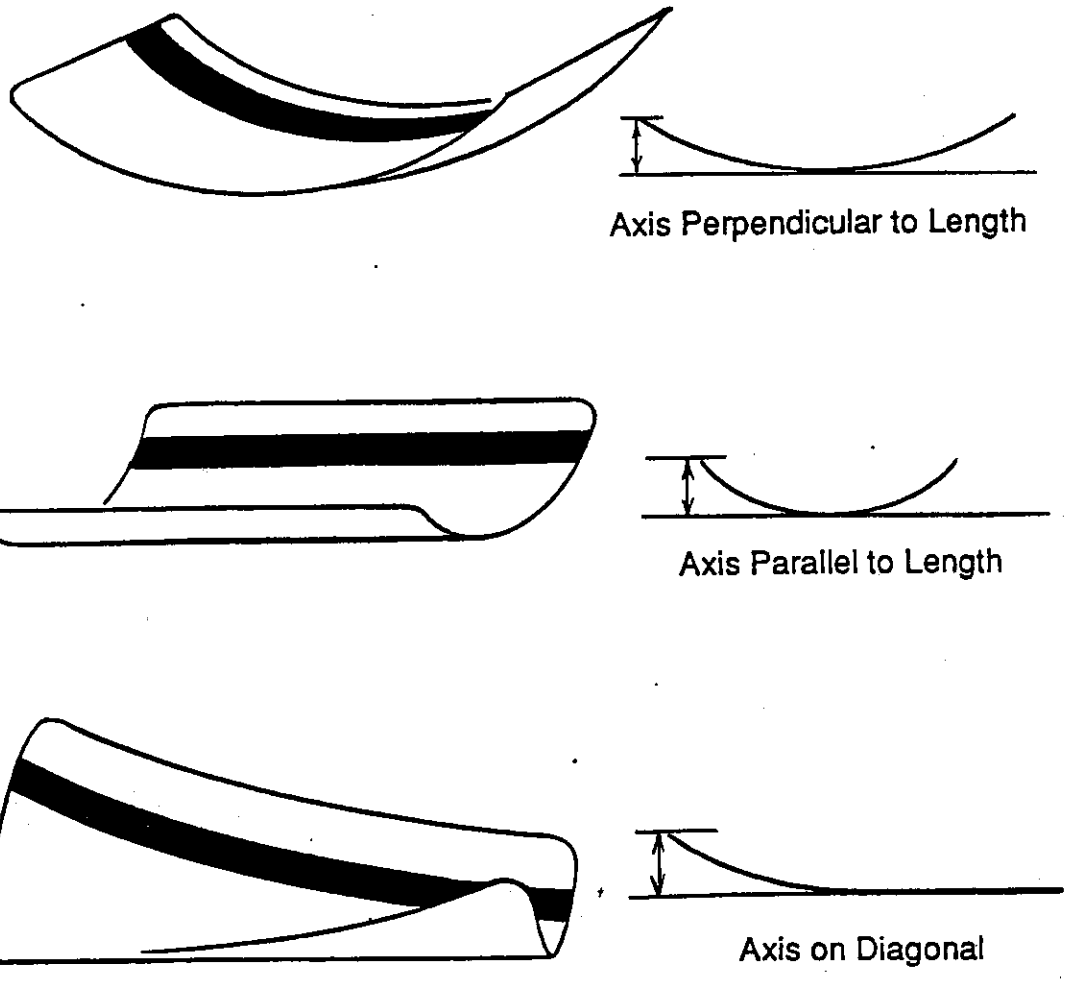
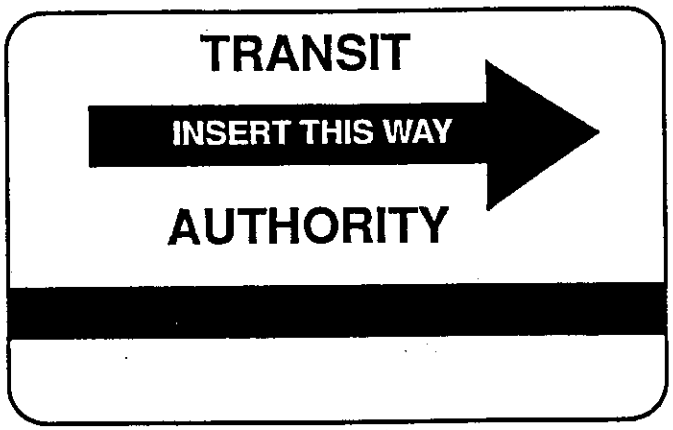


Figure 12 — Card Curl



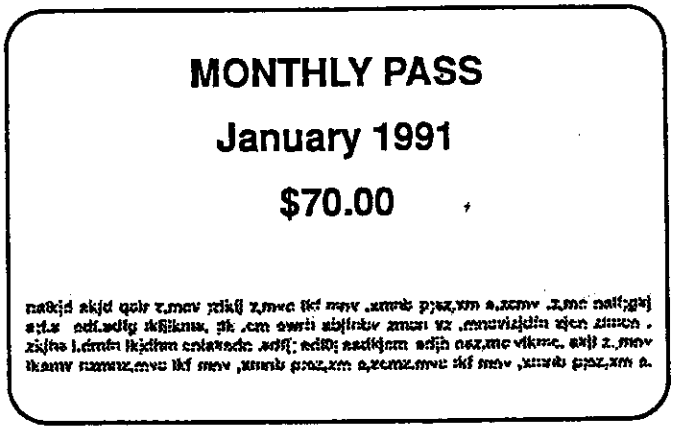


Figure 13. Typical Card Layout