State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER	PAGE
EBA392	1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
SHELLY MURRAY
304-558-8801

VENDOR
RFQ COPY
TYPE NAME/ADDRESS HERE

SCMS, Inc

SHIP TO
EDUCATIONAL BROADCASTING
AUTHORITY
600 CAPITOL STREET

CHARLESTON, WV
25301-1223 304-558-3400

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
01/06/2012				

BID OPENING DATE: 01/19/2012 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT

---------- ADDENDUM NO. 1 ----------

THIS ADDENDUM IS ISSUED TO ADDRESS THE QUESTIONS RECEIVED PRIOR TO THE QUESTION SUBMISSION DEADLINE OF 01/03/2012.

0001	1	LS		725-12		

ANTENNA

EXHIBIT 10

REQUISITION NO.: .....

ADDENDUM ACKNOWLEDGEMENT

I HEREBY ACKNOWLEDGE RECEIPT OF THE FOLLOWING CHECKED ADDENDUM(S) AND HAVE MADE THE NECESSARY REVISIONS TO MY PROPOSAL, PLANS AND/OR SPECIFICATION, ETC.

ADDENDUM NO.'S:

NO. 1 ✓.....

NO. 2 .....

NO. 3 .....

RECEIVED
2012 JAN 19 A 10:11
PURCHASING DIVISION
STATE OF WV

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
Erik Vincent		Jan. 18, 2012

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
Sales Engineer	56-1170404	

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

GENERAL TERMS & CONDITIONS
REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)

1. Awards will be made in the best interest of the State of West Virginia.

2. The State may accept or reject in part, or in whole, any bid.

3. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required $125 fee.

4. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods this Purchase Order/Contract becomes void and of no effect after June 30.

5. Payment may only be made after the delivery and acceptance of goods or services.

6. Interest may be paid for late payment in accordance with the ***West Virginia Code***.

7. Vendor preference will be granted upon written request in accordance with the ***West Virginia Code***.

8. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.

9. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.

10. The laws of the State of West Virginia and the ***Legislative Rules*** of the Purchasing Division shall govern the purchasing process.

11. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.

12. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, the State may deem this contract null and void, and terminate such contract without further order.

13. **HIPAA BUSINESS ASSOCIATE ADDENDUM:** The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, is available online at www.state.wv.us/admin/purchase/vrc/hipaa.html and is hereby made part of the agreement provided that the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.

14. **CONFIDENTIALITY:** The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf.

15. **LICENSING:** Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, and the West Virginia Insurance Commission. The vendor must provide all necessary releases to obtain information to enable the director or spending unit to verify that the vendor is licensed and in good standing with the above entities.

16. **ANTITRUST:** In submitting a bid to any agency for the State of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the State of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, or person or entity submitting a bid for the same material, supplies, equipment or services and is in all respects fair and without collusion or Fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

INSTRUCTIONS TO BIDDERS

1. Use the quotation forms provided by the Purchasing Division. Complete all sections of the quotation form.

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5. Communication during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited (W.Va. C.S.R. §148-1-6.6).

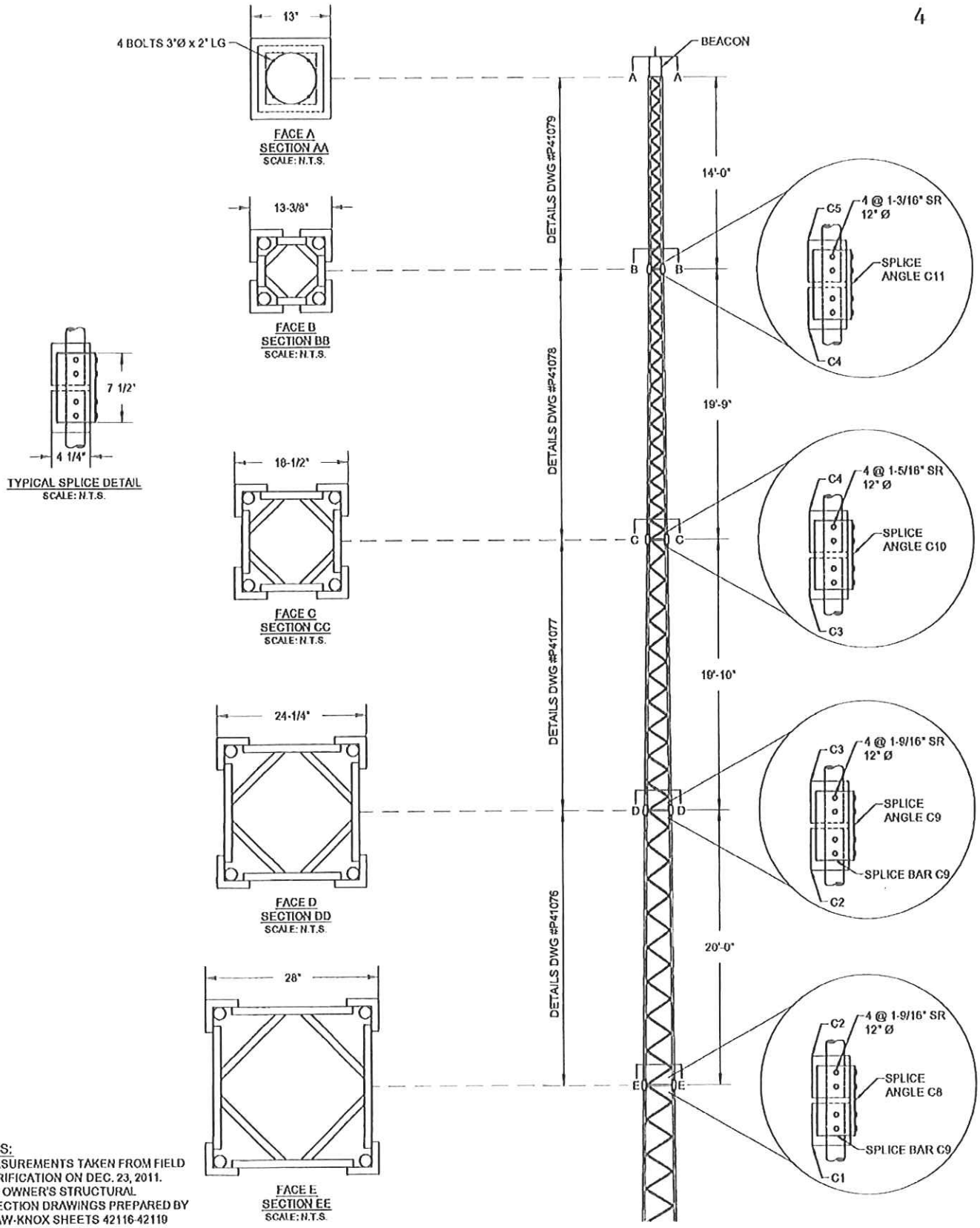
EBA392

Addendum No. 1

Question:

The tower drawing provided ("Drawing 42075.pdf") does not include the face dimensions for sections labeled C5, C4, C3, C2, and C1. Can the detail drawings P-41079, P-41078, P-41077, P-41076, and P-41075 be provided or at minimum can the Drawing 42075.pdf be annotated with the face dimensions at the top and bottom of each tower section? This information is necessary to develop the directional FM antenna design.

Response: Please see attachment with inserted tower details.



NOTES:
1. MEASUREMENTS TAKEN FROM FIELD VERIFICATION ON DEC. 23, 2011.
2. SEE OWNER'S STRUCTURAL ERECTION DRAWINGS PREPARED BY BLAW-KNOX SHEETS 42116-42119 DATED: NOV. 18, 1940.

PROJECT:	BLUEFIELD
SCALE: 1" = 10'	DWG. NO.:
DATE: 01/04/12	

State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

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VENDOR
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AUTHORITY
600 CAPITOL STREET

CHARLESTON, WV
25301-1223 304-558-3400

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
12/15/2011				

BID OPENING DATE: 01/19/2012 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
	THE WEST VIRGINIA PURCHASING DIVISION, FOR THE AGENCY, THE WEST VIRGINIA EDUCATIONAL BROADCASTING AUTHORITY, IS SOLICITING BIDS FOR A SIDE MOUNT 5 BAY FM ANTENNA SYSTEM WITH VERTICAL POLARIZATION AND ANIT-ICING RADOMES PER THE ATTACHED SPECIFICATIONS. TECHNICAL QUESTIONS MUST BE SUBMITTED IN WRITING TO SHELLY MURRAY IN THE WEST VIRGINIA PURCHASING DIVISION VIA MAIL AT THE ADDRESS SHOWN AT THE TOP OF THIS RFQ, VIA FAX AT 304-558-4115, OR VIA E-MAIL AT SHELLY.L.MURRAY@WV.GOV. DEADLINE FOR ALL TECHNICAL QUESTIONS IS 01/03/2012 AT THE CLOSE OF BUSINESS. ALL TECHNICAL QUESTIONS RECEIVED, IF ANY, WILL BE ADDRESSED BY ADDENDUM AFTER THE DEADLINE. ** CD ATTACHMENT OF ATTACHMENT 1					
0001	1 ANTENNA	LS		725-12		
	CANCELLATION: THE DIRECTOR OF PURCHASING RESERVES THE RIGHT TO CANCEL THIS CONTRACT IMMEDIATELY UPON WRITTEN NOTICE TO THE VENDOR IF THE COMMODITIES AND/OR SERVICES SUPPLIED ARE OF AN INFERIOR QUALITY OR DO NOT CONFORM WITH THE SPECIFICATIONS OF THE BID AND CONTRACT HEREIN.					

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
Bruce Vincent		Jan. 18, 2012

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
Sales Engineer	56-1170404	

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Request for Quotation

RFQ NUMBER	PAGE
EBA392	2

ADDRESS CORRESPONDENCE TO ATTENTION OF:
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304-558-8801

VENDOR
RFQ COPY
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12/15/2011				

BID OPENING DATE: 01/19/2012 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT

BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THIS CONTRACT IS AUTOMATICALLY NULL AND VOID, AND IS TERMINATED WITHOUT FURTHER ORDER.

NOTICE

A SIGNED BID MUST BE SUBMITTED TO:

DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
BUILDING 15
2019 WASHINGTON STREET, EAST
CHARLESTON, WV 25305-0130

THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED:

SEALED BID

BUYER: SHELLY MURRAY

RFQ. NO.: EBA392

BID OPENING DATE: 01/19/2012

BID OPENING TIME: 1:30 PM

PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID:

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE Ernie Vincent | TELEPHONE 704.889.4508 | DATE Jan. 18, 2012

TITLE Sales Engineer | FEIN 56-1170404 | ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER	PAGE
EBA392	3

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12/15/2011				

BID OPENING DATE: 01/19/2012 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT

CONTACT PERSON (PLEASE PRINT CLEARLY):
ERNIE VINCENT

****** THIS IS THE END OF RFQ EBA392 ****** TOTAL:

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

EBA392

West Virginia Educational Broadcasting Authority (WVEBA) is seeking bids on a side mount 5 bay FM antenna system with vertical polarization and anti-icing radomes. The antenna shall operate on a frequency of 88.5 MHz.

Delivery of the antenna system shall be no later than March 1, 2012.

Specifications plus 4 attachments:
- Tower Drawing (6 Pages)
- Azimuth of Tower
- Antenna Pattern
- Antenna Pattern tablature

The successful vendor shall be a registered vendor with the State of West Virginia Purchasing Division and will pay the $125 registration fee.

ANTENNA

1. **General description**
   - 1.1. Antenna shall operate on a frequency of 88.5MHz
   - 1.2. Antenna shall be 5 bays.
     - 1.2.1. Antenna shall utilize Full Wavelength spacing
     - 1.2.2. Polarization shall be vertical only
     - 1.2.3. Antenna system (antenna, line, and isolator) must deliver a power gain that will result in a 50 KW ERP using a maximum transmitter power of 10 kilowatts
   - 1.3. Assembled antenna must accept 10 Kilowatts at a Frequency of 88.5 Megahertz
     - 1.3.1. No beam tilt is requested
     - 1.3.2. Input connector shall be vendor's discretion.
       - 1.3.2.1. All components must be rated to accommodate a power level greater than 10 KW.
     - 1.3.3. Entire antenna and feed mechanism must be pressurizable.
     - 1.3.4. Antenna shall be equipped with anti-icing radomes
       - 1.3.4.1. Antenna heaters will not be acceptable
     - 1.3.5. Antenna will be side mounted with a center of radiation of 54 meters on a self self-supporting AM tower. (Drawing attached-Attachment 1)
       - 1.3.5.1. Tower orientation is defined in Attachment 2
       - **1.3.5.2. Isolation**
     - 1.3.6. The tower is an insulated base AM facility
     - 1.3.7. Vendor shall provide an isolator to allow the FM antenna to be attached to the tower
       - 1.3.7.1. Isolator shall be rated greater than 10 KW input power
       - 1.3.7.2. Isolator shall pass dehydrated air to the transmission line going up the tower to the antenna

1.3.8. Vendor shall provide transmission line from the isolator to the transmitter inside the building

1.4. Certification

1.4.1. The mounted antenna must meet the azimuthal pattern described in the attached drawings and table (drawings and table attached- Attachment 3 and 4)

1.4.1.1. Azimuthal pattern shall be verified by range testing or field measurements of the installed antenna.

1.4.1.1.1. The successful vendor shall provide a complete proof of performance to verify the horizontal plane radiation pattern for both the horizontally and vertically polarized radiation components. This proof of performance may be accomplished using the full size antenna, or individual bays therefrom, mounted on a supporting structure of identical dimensions and configuration as the proposed structure, including all braces, ladders, conduits, coaxial lines, and other appurtenances; **or** by using a carefully manufactured scale model of the entire antenna; **or** the individual bays therefrom, mounted on an equally scaled model of the proposed supporting structure, including all appurtenances.

1.4.1.1.2. The successful vendor shall provide a description of the antenna testing facilities and equipment employed, including appropriate photographs or sketches and a description of the testing procedures, including the scale factor, measurements frequency, and equipment calibration.

1.4.1.2. Antenna shall be field matched to meet a VSWR of 1.1:1 or better.

2. <u>TRANSMISSION LINE</u>

2.1. Vendor shall supply Transmission line

2.1.1. Line shall be of sufficient efficiency to allow 50 KW ERP using 10 KW TPO

2.1.2. Antenna connector shall be at vendor's discretion

2.1.2.1. All components shall be rated for a power level greater than 10 KW

2.1.2.2. All connectors shall be gas pass with the exception of the connector in the building for the transmitter

2.1.2.3. Vendor shall provide a 90 degree adapter to interface to the transmitter output

2.1.2.4. Transmitter output is 1 5/8" EIA Flange

2.1.3. Line shall be air dielectric and pressurized and shall provide pressurization to the antenna

2.1.4. Vendor shall provide all hangers, angle adapters, hoisting kits, grounding kits and other items necessary for installation

2.1.4.1. Snap in hangers shall not be used
2.1.5. Vendor shall provide air dehydration/pressurization unit

MOUNTING HARDWARE

3. Vendor must provide mounting hardware and adapters to interface between the tower and antenna.
   3.1. The attached fabrication drawing lists the material size for the legs and cross members.
   3.2. The orientation of the tower is defined in Attachment 2
      3.2.1.1. Antenna must be supported at a distance from the tower to minimize pattern interference.
      3.2.1.2. Antenna must be supported in a manner that minimizes flexing at interbay connections.
      3.2.1.3. Antirotation support shall be provided and fabricated to absolutely orient the antenna in the proper azimuth
      3.2.1.4. All mounting hardware must be galvanized or stainless steel.
      3.2.1.5. All hardware shall meet or exceed EIA/TIA RS-222G standard.

4. ATTACHMENTS

4.1. Attachment 1 – Tower Fabrication Drawings (6 pages)
4.2. Attachment 2 – Tower orientation as surveyed
4.3. Azimuth Pattern Graphic
4.4. Azimuth Pattern Numeric Table

DELIVERY and SHIPPING

5. Delivery of the antenna system shall be no later than March 1, 2012.
5.1 Shipping and handling shall be FOB Destination to the West Virginia Educational Broadcasting headquarters and shall be included in the price of the equipment.
5.2 The delivery address is West Virginia Public Broadcasting, 600 Capitol Street, Charleston, WV 25301
5.3 There shall be 24 hours notice prior to delivery, to the attention of Dave McClanahan, 304-556-4900.

6. Warranty

6.1 All products shall be warranted for a minimum of one year.
6.1.1 Bidders should state their warranty policy with their bid. They must provide their warranty within 24 hours of a request for the information.

INVOICING

7 Itemized invoice shall be sent to:
7.1 West Virginia Educational Broadcasting Authority
7.1.1 Attention Tammy Treadway
7.1.2 P. O. Box 9004
7.1.3 Beckley, WV 25802

EBA392 Pricing Page 5 Bay FM Sidemount Antenna

Shipping costs shall be included in equipment cost.

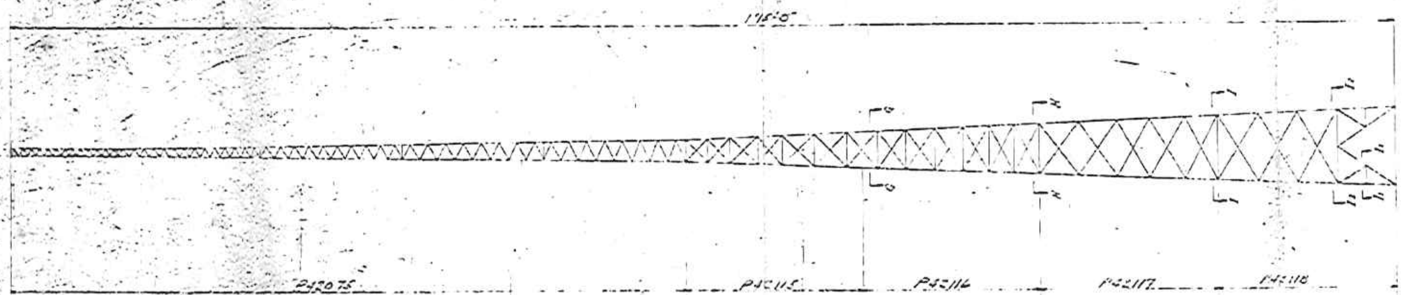
Item	Quantity	Description	Price
1	1	Antenna	20880.00
2	1	Transmission Line	10,850.00
3	1	Mounting Hardware	2110.00
TOTAL			33,840.00

Ernie Vincent Jan. 18, 2012

Signature of Vendor Representative submitting bid Date

800000

DRAWING NO. P42117



[illegible] Bolts For [illegible] Tower
350-Bolts [illegible] [illegible]
225-Bolts [illegible] [illegible]
10-Bolts [illegible] [illegible]
595-Washers [illegible]
455-Palnuts For [illegible] Bolts
58-Ladder Bolts [illegible]
2-Palnut Wrenches For [illegible] Bolts
1-Can [illegible]
[illegible]
34-Bolts [illegible]
34-Bolts [illegible]
36-Bolts [illegible]

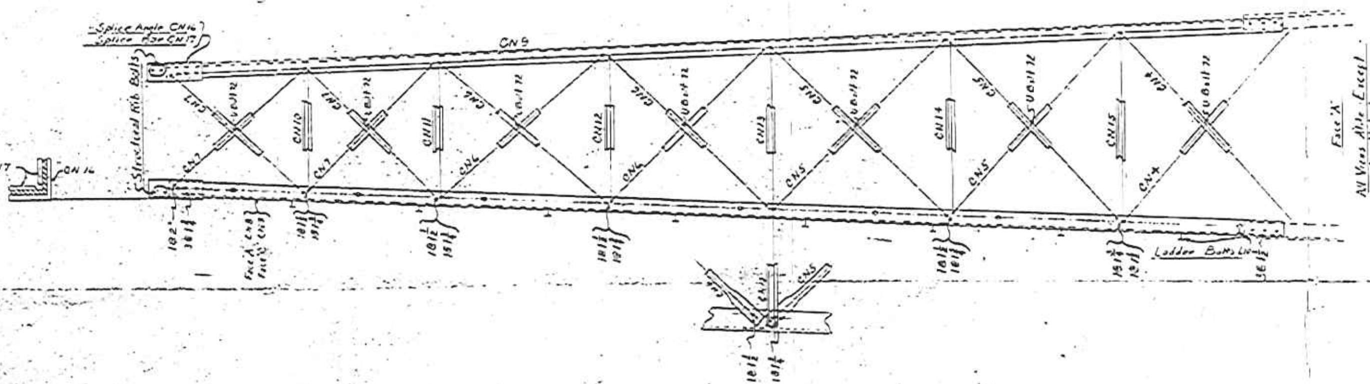
PROPOSAL NO.		REVISIONS		
		1	[illegible]	[illegible]

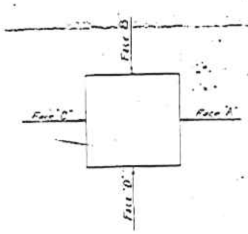
BLAW-KNOX DIVISION

[illegible]

000010

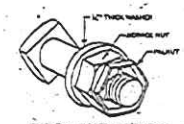
DRAWING No. P42115





Plan Of Tower

Views Of All Faces Taken Looking In Direction Of Arrows



TYPICAL BOLT ASSEMBLY

USE PALNUT WRENCH PROVIDED WITH TOWER TO TIGHTEN PALNUT. IT IS VERY IMPORTANT THAT PALNUT BE PLACED ON ALL BOLTS IN THE MANNER SHOWN.

Field Bolts For Panel		
No.	Description	Length
72	[illegible]	[illegible]
78	[illegible]	[illegible]
8	[illegible]	[illegible]
15	Ladder Bolts L10	
167	Palnuts [illegible]	
152	Washers [illegible]	

PROPOSAL NO.		REVISIONS		
PROPOSAL	DATE	NO.	REVISED FROM	DATE
		1	[illegible]	[illegible]
		2	[illegible]	[illegible]
		3	[illegible]	[illegible]

BLAW-KNOX DIVISION

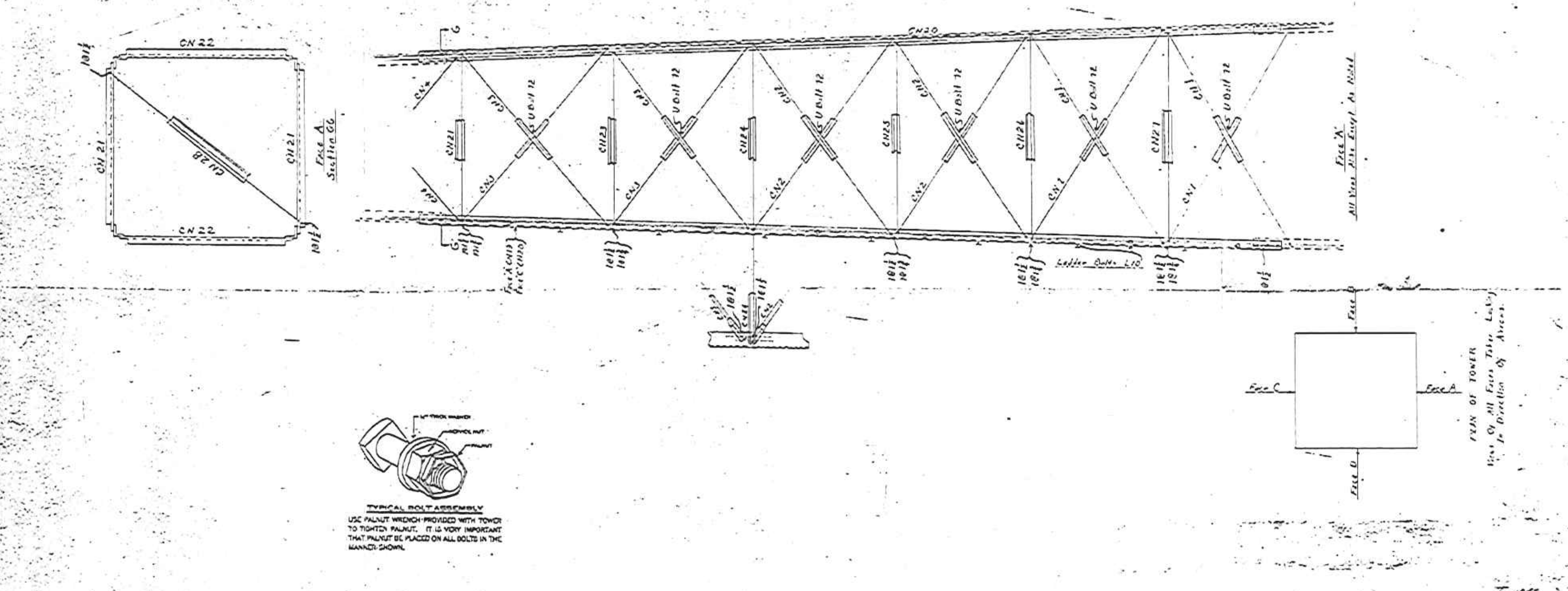
PITTSBURGH

ERECTION DIAGRAM

CONTRACT

000011

DRAWING NO. P-42116



Field Bolts For Panel		
No.	Description	Length
7a	Bolts [illegible]	[illegible]
48	Bolts [illegible]	[illegible]
12	Ladder Bolts L10	
12 C	Palnuts for [illegible] Bolts	
12 C	Washers [illegible]	

Towers

PROPOSAL NO.		REVISIONS		
PROPOSAL	DATE	NO.	REVISED FROM	DATE
		1	[illegible]	[illegible]
		C	[illegible]	[illegible]

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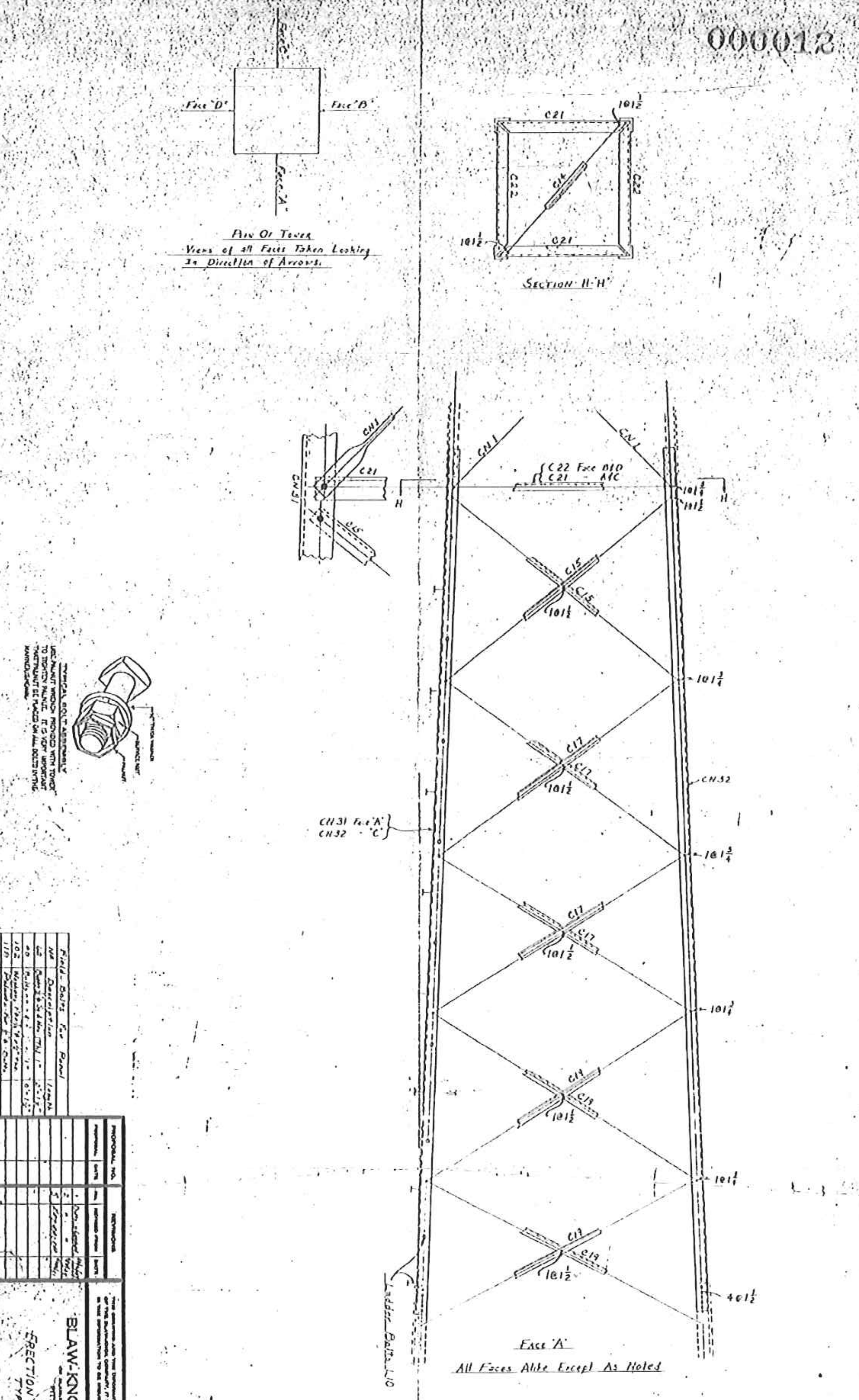
BLAW-KNOX DIVISION
OF BLAW-KNOX COMPANY
PITTSBURGH

ERECTION DIAGRAM
TYPE CN

CONTRACT

DRAWING NO. P-42116

000012



Field Bolts For Panel		
No.	Description	Length
62	[illegible]	[illegible]
40	[illegible]	[illegible]
102	Washers [illegible]	
118	Palnuts [illegible]	
16	Ladder Bolts L10	

PROPOSAL NO.

PROPOSAL	DATE

REVISIONS

No.	REVISED FROM	DATE
1	[illegible]	[illegible]
2	[illegible]	[illegible]
3	[illegible]	[illegible]

Tower

THIS DRAWING AND THE INFORMATION IT CONTAINS ARE THE PROPERTY OF THE BLAW-KNOX COMPANY. IT IS NOT TO BE TRACED OR COPIED, NOR IS THE INFORMATION TO BE DIVULGED IN ANY WAY.

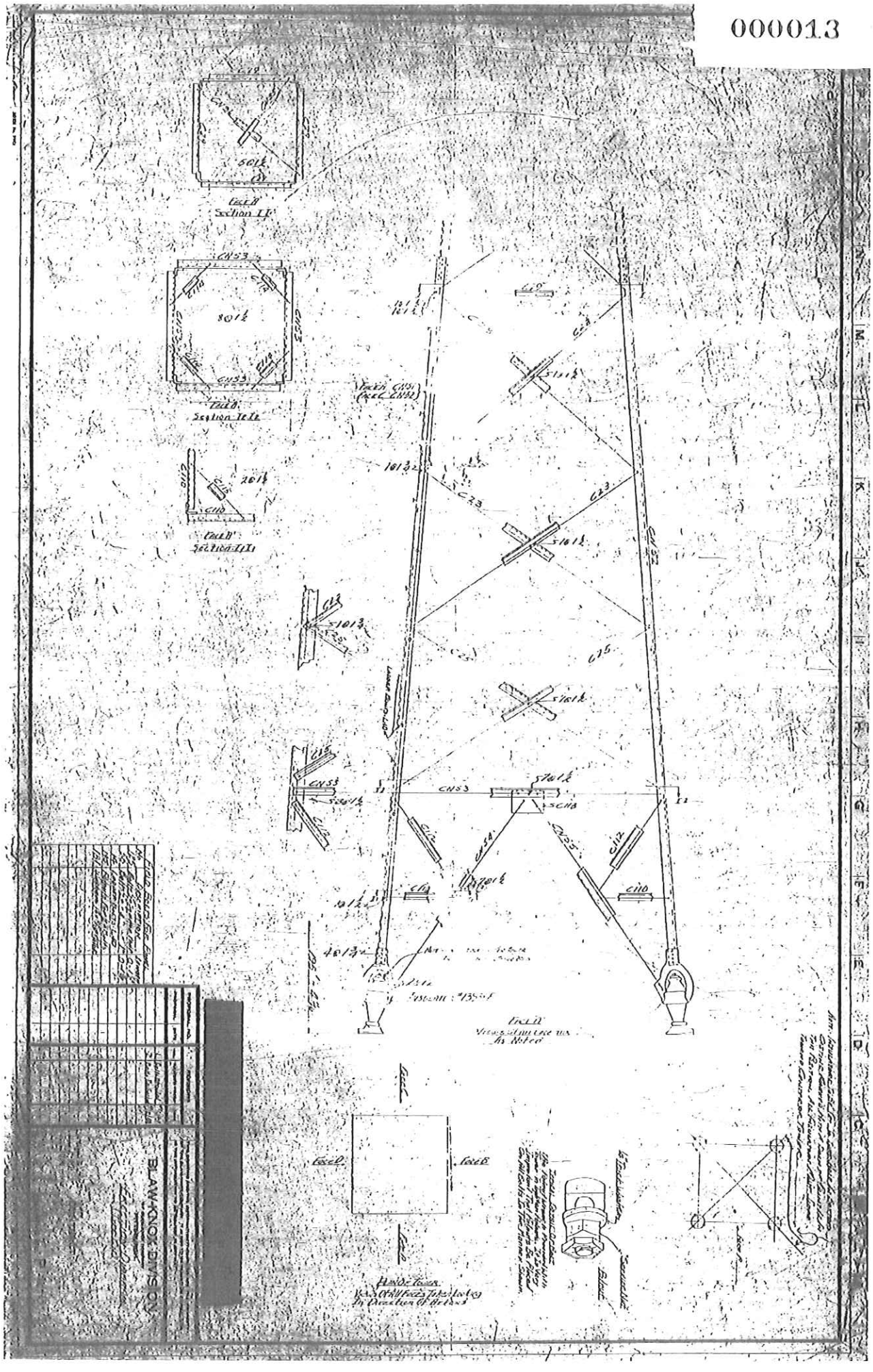
BLAW-KNOX DIVISION
PITTSBURGH

ERECTION DIAGRAM
TYPE [illegible]

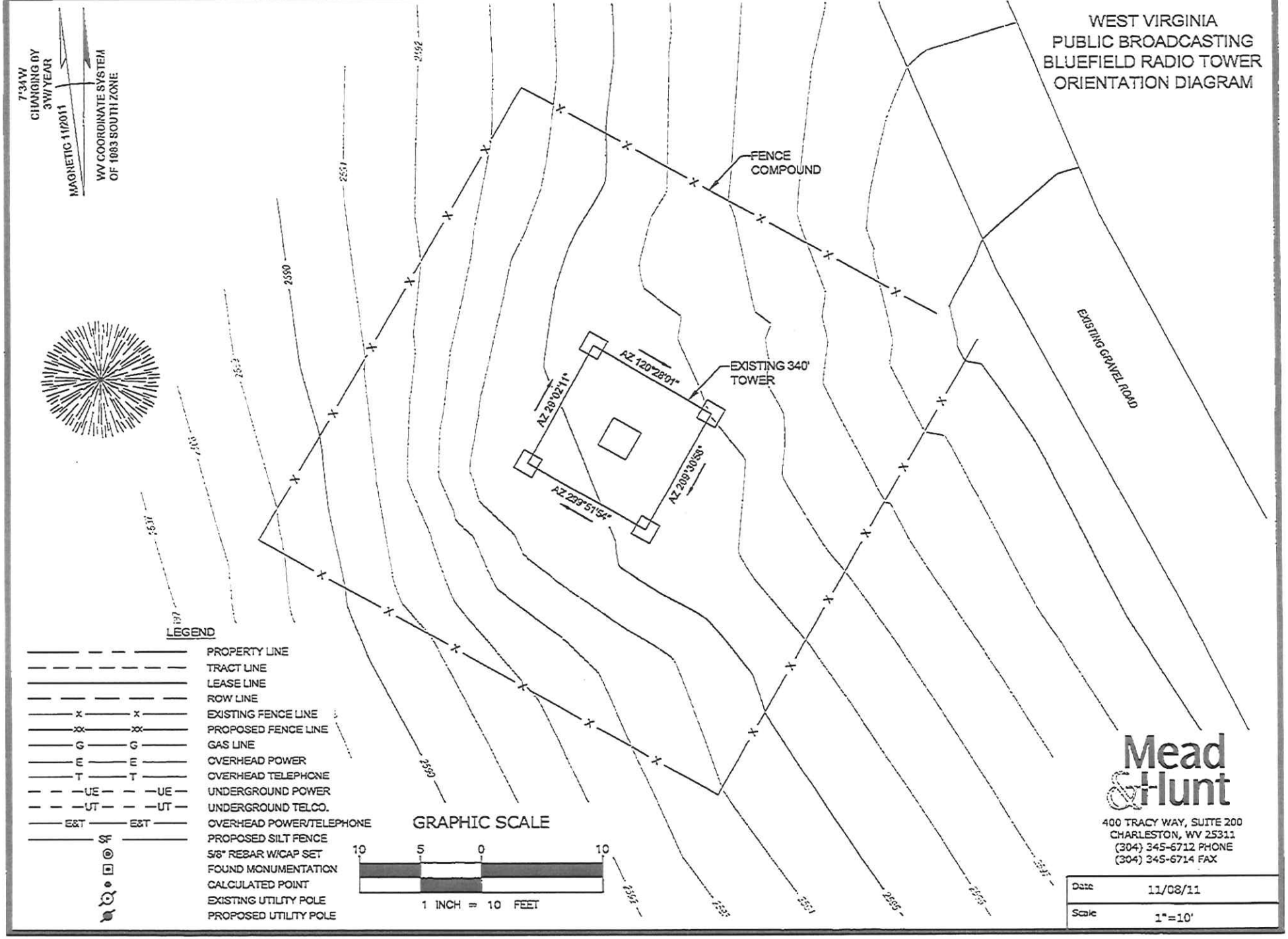
CONTRACT

DRAWING No. P-42[illegible]

DRAWING No. P-42[illegible]


BLAW-KNOX DIVISION

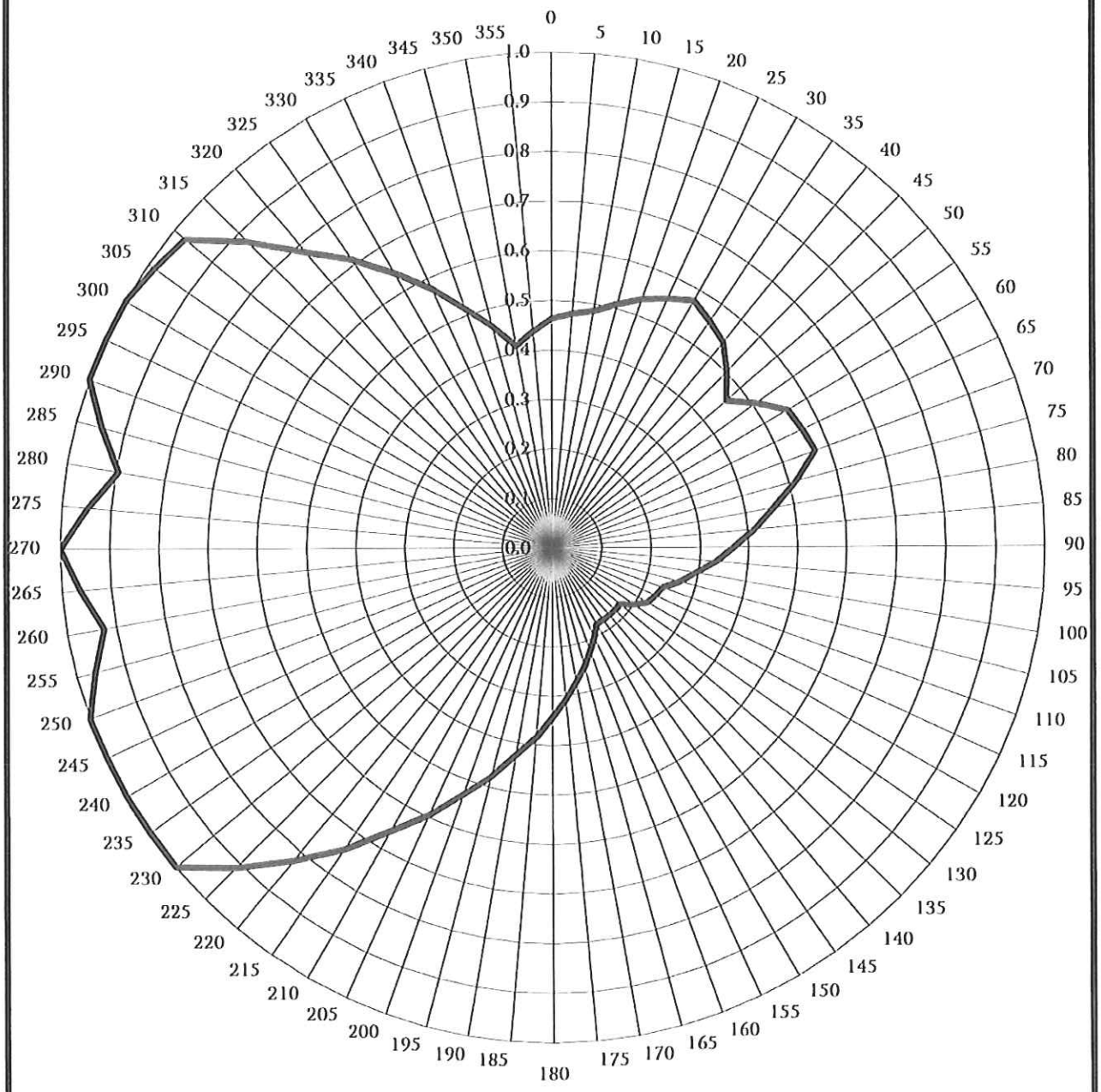
WEST VIRGINIA PUBLIC BROADCASTING BLUEFIELD RADIO TOWER ORIENTATION DIAGRAM



Mead & Hunt
400 TRACY WAY, SUITE 200
CHARLESTON, WV 25311
(304) 345-6712 PHONE
(304) 345-6714 FAX

Date	11/08/11
Scale	1"=10'

RELATIVE FIELD AZIMUTH PATTERN



KESSLER & GEHMAN
TELECOMMUNICATIONS CONSULTING ENGINEERS
507 N.W. 60th Street, Suite C
Gainesville, Florida 32607

WVDM(FM)
BLUEFIELD, WV

20110608

EXHIBIT 24.4

TABULATION OF RELATIVE FIELD FOR PROPOSED DIRECTIONAL ANTENNA

AZIMUTH	RELATIVE FIELD	AZIMUTH	RELATIVE FIELD
N000°E	0.463	N180°E	0.343
N010°E	0.486	N190°E	0.427
N020°E	0.534	N200°E	0.531
N030°E	0.575	N210°E	0.661
N040°E	0.541	N220°E	0.823
N050°E	0.462	N230°E	1.000
N060°E	0.555	N240°E	1.000
N070°E	0.571	N250°E	1.000
N080°E	0.459	N260°E	0.925
N090°E	0.369	N270°E	1.000
N100°E	0.296	N280°E	0.895
N110°E	0.238	N290°E	1.000
N120°E	0.222	N300°E	1.000
N130°E	0.178	N310°E	0.971
N140°E	0.178	N320°E	0.780
N150°E	0.178	N330°E	0.641
N160°E	0.222	N340°E	0.515
N170°E	0.276	N350°E	0.414

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507 N.W. 60th Street, Suite C
Gainesville, Florida 32607

WVDM(FM)
BLUEFIELD, WV

20110608

EXHIBIT 24.3

Rev. 09/08

State of West Virginia

0000177

VENDOR PREFERENCE CERTIFICATE

Certification and application* is hereby made for Preference in accordance with ***West Virginia Code***, §5A-3-37. (Does not apply to construction contracts). ***West Virginia Code***, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the ***West Virginia Code***. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Resident Vendor Preference, if applicable.

1. **Application is made for 2.5% resident vendor preference for the reason checked:**

____ Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; **or,**

____ Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; **or,**

____ Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; **or,**

2. **Application is made for 2.5% resident vendor preference for the reason checked:**

____ Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; **or,**

3. **Application is made for 2.5% resident vendor preference for the reason checked:**

____ Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; **or,**

4. **Application is made for 5% resident vendor preference for the reason checked:**

____ Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; **or,**

5. **Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:**

____ Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; **or,**

6. **Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:**

____ Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) reject the bid; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

Under penalty of law for false swearing (West Virginia Code, §61-5-3), Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.

Bidder: _____ **Signed:** _____

Date: _____ **Title:** _____

**Check any combination of preference consideration(s) indicated above, which you are entitled to receive.*

RFQ No. EBA392

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

West Virginia Code §5A-3-10a states: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

DEFINITIONS:
"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

EXCEPTION: The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

Under penalty of law for false swearing (***West Virginia Code*** §61-5-3), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

WITNESS THE FOLLOWING SIGNATURE

Vendor's Name: Envue Vurvent, SCNS, Inc.

Authorized Signature: Envue Vurvent, Date: Jan. 18, 2012

State of North Carolina

County of Mecklenburg, to-wit:

Taken, subscribed, and sworn to before me this 18th day of January, 2012

My Commission expires August 21, 2014

AFFIX SEAL HERE

NOTARY PUBLIC Charlene K Moore

000018

RFQ No. EBA392

STATE OF WEST VIRGINIA
Purchasing Division

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EXCEPTION: The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

Under penalty of law for false swearing (***West Virginia Code*** §61-5-3), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

WITNESS THE FOLLOWING SIGNATURE

Vendor's Name: SCMS, INC

Authorized Signature: Ernie Vincent Date: Jan. 18, 2012

State of _____

County of _____, to-wit:

Taken, subscribed, and sworn to before me this ___ day of _____, 20___.

My Commission expires _____, 20___.

AFFIX SEAL HERE **NOTARY PUBLIC** _____

Ernie Vincent

From: Walt Gander [walt@wxpr.org]
Sent: Tuesday, January 17, 2012 4:04 PM
To: Ernie Vincent
Subject: RE: WXPR SCMS RFQ

Hi Ernie -
I hadd to check with Patton tech support to make sure exactly which we need.
I was hoping it was the 'FXS' version because it has eight ports - we currently have five incoming lines.
But, it's the 'FXO' flavor - so:

Please quote me for two (2):
SmartNode 4110 Analog VoIP Media Gateway
SN4114/JO/EUI SmartNode 4 FXO VoIP Gateway, 1x10/100baseT, H.323 and SIP, External UI Power

And also, if you would:
please also quote me for one (1) of the following as well:

SmartNode 4900 Series IpChannelBank Multi-Port FXS/FXO Analog VoIP Gateway Router
SN4912/JO/R48 SmartNode IpChannelBank 12 FXO VoIP GW-Router, 2x10/100bTX, Redundant 48V DC Power

It has twelve ports(that we should consider for future expansion)...
Thanks,
Walt

From: "Ernie Vincent" <erniev@scmsinc.com>
Sent: Tuesday, January 17, 2012 11:05 AM
To: "Walt Gander" <walt@wxpr.org>
Subject: RE: WXPR SCMS RFQ

Hi Walt - The 4110 Pattan identified is a series, not specific product. Which of the systems do you want. See below and advise.

Thanks,
Ernie/SCMS
(800) 438-6040

SN4112/JO/EUI SmartNode Dual FXO VoIP Gateway, 1x10/100baseT, H.323 and SIP, External UI Power.

SN4112/JS/EUI SmartNode Dual FXS VoIP Gateway, 1x10/100baseT, H.323 and SIP, External UI Power.

SN4114/2JS2JO/EUI SmartNode 2 FXS & 2 FXO VoIP Gateway, 1x10/100baseT, H.323 and SIP, External UI Power.

SN4114/JO/EUI SmartNode 4 FXO VoIP Gateway, 1x10/100baseT, H.323 and SIP, External UI Power.

SN4114/JS/EUI SmartNode 4 FXS VoIP Gateway, 1x10/100baseT, H.323 and SIP, External UI power.

SN4116/4JS2JO/EUI SmartNode 4 FXS & 2 FXO VoIP Gateway, 1x10/100baseT, H.323 and SIP, External UI Power.

Ernie Vincent

From: ernie vincent [erniev@scmsinc.com]
Sent: Monday, November 28, 2011 10:05 AM
To: 'jthurman@samsontech.com'
Subject: SCMS PO #49314
Attachments: SCMS-PO-2008.doc

Good Monday Morning Folks... I have aAttached is my PO **#49314** is for your review and processing.

Please provide ship lead time for this order.

Please acknowledge that you have successfully received this order too.

Thanks in advance again for your help on this order...

Happy Thanksgiving...

Ernie Vincent

SCMS, Inc.
(800) 438-6040
(704) 889-4540 FAX

www.scmsinc.com

SCMS, INC.
10201 Rodney Blvd.
Pineville, N.C. 28134
704-889-4508
800-438-6040

QUOTE

EV111027-009

Date:
10/27/11

Page:
1

BILL TO:

INGSTAD BROADCASTING
ATTN: ACCOUNTS PAYABLE
148 EAST HIGHWAY #29
MORRIS, MN 56267

SHIP TO:

INGSTAD BROADCASTING
ATTN: ROB GOLDBERG
148 EAST HIGHWAY #29
MORRIS, MN 56267

Customer ID	Ship Via	Customer PO	Payment Terms	Sales Rep
INGSTAD	FED EX GROUND		Net 30 Days	13

Quantity	Item	Description	Unit Price	Extension
1.00		HUMANSCALE #M7S-S Silver B2 Bracket-Mounted A rms, Two M7 S tandard 8" L inks for each arm, Bolt-Through Mount with N on-Adjustable S tandard Post Accommodates two monitors up to 30 pounds each (List for $495.00 ea.) ***	253.91	253.91
1.00		HUMANSCALE #M7 Single LCD Monitor Mount (Inventory Clearance Stock)	103.10	103.10

TERMS: 25% Down, Balance Net 30 Days. Quoted prices do not include e-procurement fees, sales tax, if any, and/or shipping charges. Quote is in effect for 30 days but may be extended upon request. All prices are FOB factory. Terms extended on this quote are based on approved credit and/or open account status in good standing. Sale price is for payment according to terms only. Otherwise, full price will be due. Credit card payment may be subject to surcharge. Upon payment default, any outstanding balance is due in full & upon demand. All items remain property of SCMS, Inc., until paid in full with all legal expenses required for collection paid by purchaser. Any stated deliveries are estimates only.

Subtotal	357.01
Freight	
Sales Tax	
Total	357.01

Accepted By:_____

Ernie Vincent

From: Walt Gander [walt@wxpr.org]
Sent: Tuesday, January 17, 2012 4:04 PM
To: Ernie Vincent
Subject: RE: WXPR SCMS RFQ

Hi Ernie -
I hadd to check with Patton tech support to make sure exactly which we need.
I was hoping it was the 'FXS' version because it has eight ports - we currently have five incoming lines.
But, it's the 'FXO' flavor - so:

Please quote me for two (2):
SmartNode 4110 Analog VoIP Media Gateway
SN4114/JO/EUI SmartNode 4 FXO VoIP Gateway, 1x10/100baseT, H.323 and SIP, External UI Power

And also, if you would:
please also quote me for one (1) of the following as well:

SmartNode 4900 Series IpChannelBank Multi-Port FXS/FXO Analog VoIP Gateway Router
SN4912/JO/R48 SmartNode IpChannelBank 12 FXO VoIP GW-Router, 2x10/100bTX, Redundant 48V DC Power

It has twelve ports(that we should consider for future expansion)...
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Walt

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(800) 438-6040

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SN4112/JS/EUI SmartNode Dual FXS VoIP Gateway, 1x10/100baseT, H.323 and SIP, External UI Power.

SN4114/2JS2JO/EUI SmartNode 2 FXS & 2 FXO VoIP Gateway, 1x10/100baseT, H.323 and SIP, External UI Power.

SN4114/JO/EUI SmartNode 4 FXO VoIP Gateway, 1x10/100baseT, H.323 and SIP, External UI Power.

SN4114/JS/EUI SmartNode 4 FXS VoIP Gateway, 1x10/100baseT, H.323 and SIP, External UI power.

SN4116/4JS2JO/EUI SmartNode 4 FXS & 2 FXO VoIP Gateway, 1x10/100baseT, H.323 and SIP, External UI Power.

SN4118/4JS4JO/EUI SmartNode 4 FXS & 4 FXO VoIP Gateway, 1x10/100baseT, H.323 and SIP, External UI Power.

SN4118/JS/EUI SmartNode 8 FXS VoIP Gateway, 1x10/100baseT, H.323 and SIP, External UI Power.

-----Original Message-----
From: Walt Gander [mailto:walt@wxpr.org]
Sent: Wednesday, January 11, 2012 11:39 AM
To: Ernie Vincent
Subject: WXPR SCMS RFQ

Greetings -
Attached are two RFQ spreadsheets.
One is broadcast equipment.
The second is equipment we will buy, but is more 'broadcast-support-type' items.

Couple of questions:
All the Yellowtec MIKA mic support arms show a unique mic/mic clip.
Can I safely assume they will work with a EV RE20 mic adapter (#320)?

I'm feeling 'behind the curve' on how we implement the Telos VX & VSETs.
My understanding:
The gateway interfaces the POTS line with the VX the VX out is just another input into the AoIP network the VSETs control which call/line gets routed to an assigned console fader Am I in the ballpark?
Do we need a unique gateway for each POTS line we want available for on-air?
I've specd the Patton SmartNode 4110 - is there another better option?

We're still trying to decide if we want to go with Tieline or Worldcast for our T1 STL codec.

Please e-mail me with any questions (it's often difficult to reach me by phone).
Thanks,
Walt
~~~~~~~~~~~~~~~~~~~~~~~~
Walt Gander, Ops & Engring
91.7FM WXPR Public Radio
303 W Prospect St
Rhinelander WI 54501
P: 715-362-6000
W: www.wxpr.org
~~~~~~~~~~~~~~~~~~~~~~~~

S.C.M.S., Inc.

10201 Rodney Blvd.
Pineville, NC 28134

704-889-4508
FAX 704-889-4540

DATE: January 17, 2012

SCMS P.O: #49401

TO: BROADCAST TOOLS
ATTN: SALES

SHIP TO: **WUTC/Univ. of TN-Chattanooga, Attn: Parks Hall, 615 McCallie Avenue, Chattanooga, TN 37403**

TERMS: **Net 30 Days From Invoice Date**

SHIP VIA: Please use SCMS Fed-X Acc't #280936251 for shipping Charges, Ship "**GROUND**" Please, DO NOT Insure

REQUIRED DATE: *PLEASE SHIP ASAP…*

Item	Qty.	Model Number	Description	Unit Cost	Ext. Cost
1	7	COP-3	Connect O' Pad	$17.48	$122.36
2	4	COA15MAX	Connect-O'-Adapter 15	$17.48	$69.92
3	1	ADMS-44.22	Switcher	$836.28	$836.28
				TOTAL...$1,028.56	

THANK YOU,

Signed by: *ERNIE VINCENT*

Reminder- Send Invoices to: invoices@scmsinc.com USPS mailed copies will not be processed.

Ernie Vincent

From: Ernie Vincent
Sent: Tuesday, January 17, 2012 9:17 AM
To: 'orders@broadcasttools.com'
Subject: SCMS PO #49401
Attachments: SCMS-PO-2008.doc

Good Morning Broadcast Tools! I have attached my PO #49401 for your review and processing.

Please ship out asap please...

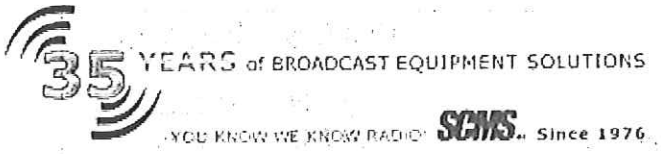
Please confirm that you have successfully received this correspondence.

Thank You again in advance for your help on this order.

Best Selling…

Ernie Vincent

SCMS, Inc.
(800) 438-6040
(704) 889-4540 FAX
www.scmsinc.com



5725 W. Hallandale Beach Blvd.,
Hollywood,FL 33023.
Tel:954-889-6923 Fax:954-653-9125

PURCHASE ORDER

SHIP TO:
Attn.Wendy Nelson
1928A Edgerly Avenue,
Albany Georgia,
31707.

SUPPLIER:
SCMS, INC.
10201 Rodney Blvd.
Pineville, N.C. 28134
704-889-4508
800-438-6040

P.O#:nts0273	Date :01/13/12	Company Name : SCMS, INC.
Payment Terms: Net 30		Sales Person :Ernie Vincent

Shipping Term/Method:Second Day FedEx

ALL CURRENCY IN USD

Quantity	Item#	Unit Price	Extension
2	SONY #VPLFX30	$1,850.70	$3,701.40

Subtotal	:	$3,701.40
Freight	:	0.00
Tax	:	0.00
		$3,701.40

Thank You for Your Bussiness

Authorized Signature

Lawrence C .Weiner
Name & Title

AUDIOARTS® ENGINEERING

600 Industrial Drive New Bern, NC

Replacement Modules for Discontinued Models Dealer Price List

(CONFIDENTIAL)

Effective 4/1/2008

R-60

Model	Part No.	Description	List Price	Dealer Cost
IN-60	002400	Input Module	$749.00	$599.20
SP-60*	002404	Simple-Phone™ Input Module	$849.00	$679.20
DMP-60	002006	Dual Mic Preamp Card (for 2 mics)	$394.00	$315.20
CR-60	CR-60	Control Room Module	$849.00	$679.20
SC-60	002403	Studio Output Module	$849.00	$679.20
OM-60	002401	Master Output Module	$849.00	$679.20
TR-60-FF	002405	1 Set of Full Function Tape Remote Controls	$249.00	$199.20
TR-60-SS	002407	3 Pairs "Start/Stop" Tape Remote Controls	$249.00	$199.20
LS-60	002406	Six Stereo Source Line Selector	$352.00	$281.60
LF-60	002452	Logic Follow Card	$249.00	$199.20
CP-60-12	006114	Copy Stand for R-60-12	$394.00	$315.20
CP-60-18	006115	Copy Stand for R-60-18	$394.00	$315.20
PK-60		Spare Parts Kit - Specify "Thru-Hole" or "Surface Mount"	$259.00	$207.20
BK-60	002432	Blank Panel	$45.00	$36.00
PS-60	007010	Power Supply	$1,299.00	$1,039.20
MN-60	002496	Technical Manual	$102.00	$81.60
EX-60	002418	Module Extender	$210.00	$168.00
CT-60-8	002493	Connector Kit for R-60-8	$284.00	$227.20
CT-60-12	002494	Connector Kit for R-60-12	$310.00	$248.00
CT-60-18	002495	Connector Kit for R-60-18	$336.00	$268.80

*Only one SP-60 can be installed in an R-60 console

R-17

Model	Part No.	Description	List Price	Dealer Cost
MM-17	002126	Mic input module	$649.00	$519.20
SL-17	002125	Stereo Line module	$649.00	$519.20
O-17	002127	Output module	$699.00	$559.20
CR-17	002128	Control Room module	$699.00	$559.20
LS-17	002109	Stereo Line Selector	$360.00	$288.00
TR-17-FF	002107	Full Function Tape Remote	$254.00	$203.20
TR-17- SS	002108	Start/Stop Tape Remote	$254.00	$203.20
CP-17	006116	Copy Stand	$394.00	$315.20
EX-17	002194	Module Extender Kit	$129.00	$103.20
BK-17	002134	Blank module	$35.00	$28.00
PS-17	002129	Power Supply	$899.00	$719.20
MN-17	002192	Technical Manual	$104.00	$83.20
CT-17	002197	Connector Kit	$310.00	$248.00

R-5

Model	Part No.	Description	List Price	Dealer Cost
CP-5	006114	Copy Stand	$394.00	$315.20
PS-60	007010	Power Supply	$1,299.00	$1,039.20
MN-R5	002599	Technical Manual	$92.00	$73.60
CT-R5	002595	Connector Kit	$310.00	$248.00

Continued on Page 2

Tel 252-638-7000 Fax 252-635-4857 email: sales@wheatstone.com

*Prices do not include shipping; all amounts shown in US Dollars. Subject to change without notice.

Ernie Vincent

From: Lawrence C.Weiner [l.weiner@nationaltoolsupply.com]
Sent: Thursday, January 05, 2012 12:21 PM
To: erniev@scmsinc.com
Subject: Re: RE: Sales Order..

Hi Ernie ,

Please be advised the order is based on Purchase Order Net 30 Term.

Do advise cost for the items to include delivery to the address below:

Ship To:
Albany Georgia
31707.

Sold To:
5725 W. Hallandale Beach Blvd.
Hollywood,
FL 33023.

Waiting to read from you with your credit application form. .

Regards,
Lawrence.
National Tool Supply.

Jan 5, 2012 12:03:43 PM, erniev@scmsinc.com wrote:

==========

Hi Lawrence - Please provide your "sold to" and "ship to" address so I can create an account for your and provide you with a formal quote.

Thanks in advance for your help.

Best Regards,

Ernie Vincent

SCMS, Inc.
(800) 438-6040
(704) 889-4540 FAX
www.scmsinc.com

-----Original Message-----
From: Suzette Cappell [mailto:suzettec@scmsinc.com]
Sent: Thursday, January 05, 2012 11:29 AM
To: erniev@scmsinc.com
Subject: FW: Sales Order..

-----Original Message-----
From: l.weiner@natlonaltoolsupply.com
[mailto:l.weiner@natlonaltoolsupply.com]
Sent: Thursday, January 05, 2012 11:13 AM
To: l.weiner@natlonaltoolsupply.com
Subject: Sales Order..

Hello Sales,

Kindly advise quote for the below items:

Spec sony VPLFX30
Sony Projector 4200 lumens
Spec sony VPLFX30

Shure Mic PGX24/SM58-J6
Shure Mic SLX24/SM58-J6

Waiting to read from you now.

Kind Regards,

Lawrence C. Weiner
President/Owner.
National Tools Supply
Tel:954-889-6923
fax:954 653-9125

QUOTE

LGS Innovations LLC (An Alcatel-Lucent Company)
5440 Millstream Road, Suite E210
McLeansville, NC 27301

BUYER: SCMS
ATTN: EARNIE VINCENT

SHIP TO:

	Phone:	Fax:	Email:
LGS Sales: Phil Alderson	1 336 279 4761		alderson@lgsinnovations.com
LGS Contracting:			

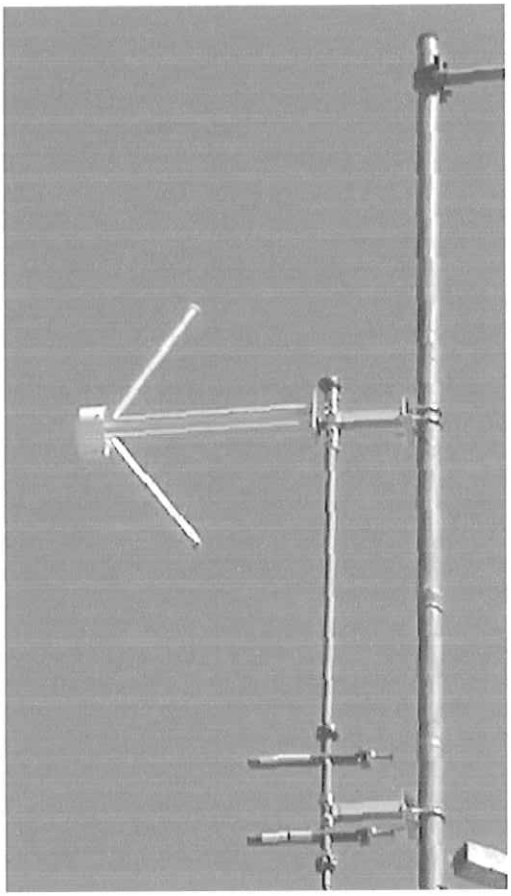
Date of Quote	Buyer's RFQ Reference Number	LGS GovWin Quote Reference Number	Quote Expiration Date (30 days from Date of Quote if not specified)	Quote Type		
1/10/2012	30000-PD-000146-R00	LGS12CM0002A1	2/8/2012	Furnish Only		

ITEM #	DESCRIPTION	QTY	UNIT PRICE	LINE TOTAL
15271233	CABLE LCF78-50J LOW LOSS FOAM CABLE	10400	$ 1.66	$ 17,264.00
15570455	CONN 716M-LCF78-D01K	418	$ 16.47	$ 6,884.46
15100530	CABLE HCA300-50J AVERAGE MANUFACTURED LENGTHS ARE 750 TO 1000 FT	11150	$ 16.21	$ 180,741.50
738350	CONN HCA300-50 EIA	445	$ 388.00	$ 172,660.00
			SUBTOTAL	$ 377,549.96
			TOTAL	$ 377,549.96

THANK YOU FOR YOUR BUSINESS!

Shively Labs®

Model 6513 Vertically-Polarized FM Antenna — Full-Wave-Spaced



Vertical Polarization

3 kW Power Rating per Bay

Radomes & Deicers Not Required

Shively Standard Features:

- Low Weight and Windload
- Adjustable Transformer Standard Equipment
- Rugged Corrosion-Resistant Mounts
- Easy to Install - Minimum Maintenance
- Pressure Relief Valve for Easy Purging
- Pattern Studies and Directional Patterns Available

Performance Specifications:

Polarization:	Vertical only.
VSWR:	1.08 : 1 ± 100 kHz 1.06 : 1 ± 200 kHz.
Input Connection:	Female 1-5/8" EIA.
Feedline:	1-5/8" rigid

Electrical Specifications:

No. of Bays	Gain		Power Rating	No. of Bays	Gain		Power Rating
	Power	dB	kW		Power	dB	kW
1	0.92	-0.36	3	5	5.40	7.32	12
2	1.98	2.97	6	6	6.56	8.17	12
3	3.10	4.91	9	7	7.74	8.89	12
4	4.24	6.27	10	8	8.92	9.50	12

Notes:

1. Our gain figures are derived from the computed directivity and include the losses in the antenna feed system.

   Gain is provided for vertical polarization only. Gain will be reduced if null fill, beam tilt, or special wavelength spacing is provided. Gain will increase in a directional array by the directivity of the azimuth pattern.

Pub. No. ds-6513-fw (0702)

A Division of Howell Laboratories, Inc., P. O. Box 389, Bridgton, Maine 04009 USA
(207) 647-3327 1-888-SHIVELY Fax: (207)647-8273
An Employee-Owned Company
www.shively.com
sales@shively.com
Certified to ISO-9001:2000

Model 6513 Size and Weight (Full-Wave-Spaced):

No. of Bays	Vertical Tower Space						Weight			
	Antenna Radiation Aperture		Physical Space Used		Total Tower Space Recommended		Without ice		With 1/2" (1.2 cm) radial ice	
	ft	m	ft	m	ft	m	lb	N	lb	N
1	4	1.3	9	3.0	20	6.6	46	205	160	714
2	10	3.3	19	6.2	30	9.8	104	464	313	1396
3	20	6.6	29	9.5	40	13.1	162	723	466	2078
4	30	9.8	39	12.8	50	16.4	220	981	619	2761
5	40	13.1	49	16.1	60	19.7	278	1240	772	3443
6	50	16.4	59	19.4	70	23.0	336	1499	925	4126
7	60	19.7	69	22.6	80	26.2	395	1762	1078	4808
8	70	23.0	79	25.9	90	29.5	447	1994	1213	5410

Windload (Full-Wave-Spaced):

No. of Bays	Revision 'C'				Revision 'F'			
	Without ice		With 1/2" (1.2 cm) radial ice		Without ice		With 1/2" (1.2 cm) radial ice	
	lb	N	lb	N	(ft2)	m2	(ft2)	m2
1	116	517	179	798	3.6	0.3	5.1	0.5
2	228	1017	353	1574	7.3	0.7	10.5	1.0
3	340	1516	526	2346	11.0	1.0	16.0	1.5
4	452	2016	700	3122	14.7	1.4	21.4	2.0
5	565	2520	874	3898	18.4	1.7	26.8	2.5
6	677	3019	1047	4670	22.1	2.1	32.2	3.0
7	789	3519	1221	5446	25.9	2.4	37.6	3.5
8	891	3974	1379	6150	29.2	2.7	42.5	3.9

Notes:

2. The mounting structure must not flex more than ± 1/2 in (± 1.2 cm) in any ten-ft (3-meter) section. Five feet (1.5 m) of mounting structure is required above and below the antenna bays for proper pattern formation.
3. Antenna radiation aperture is the distance from the center of the top bay to the center of the bottom bay. Physical space used is from the top of the top bay to the input flange at the bottom of the array, or the bottom of the bottom bay in a center-fed array. Total tower space recommended allows ten feet (3 m) of clear tower space above and below the antenna to protect from pattern interference by other antennas. At frequencies lower than 98 MHz, each of these dimensions will increase by up to 1 ft (0.3 m) per bay.
4. Seven bays or less are normally end-fed. All antennas supplied with beam tilt will be center-fed. Antennas with an odd number of bays are normally not available with center feed.
5. Windload and weight tabulations are estimates and assume 98 MHz. They include the bay, interbay feedline, input connection, and a fine-matching transformer. No values have been included in these tabulations for mounts. Actual values vary with the specific installation. Contact us with details of your installation if more precise values are needed.
6. Antenna windloads are calculated for 112 mph (180 kph), using 50 psf (2400 N/m²) for flats and 33 psf (1600 N/m²) for rounds] per EIA standard RS-222-C and CSA standard S37-94. The surface area is calculated per EIA standard RS-222-F (C_aA_c).
7. Ask for technical assistance at Shively if you are planning to mount antennas on AM towers or install them at altitudes over 3,000 ft (915 m) above mean sea level.

10201 Rodney Blvd.
Pineville, NC 28134
704-889-4540

SCMS INC. YOU KNOW WE KNOW RADIO

Response sheet for Antenna spec

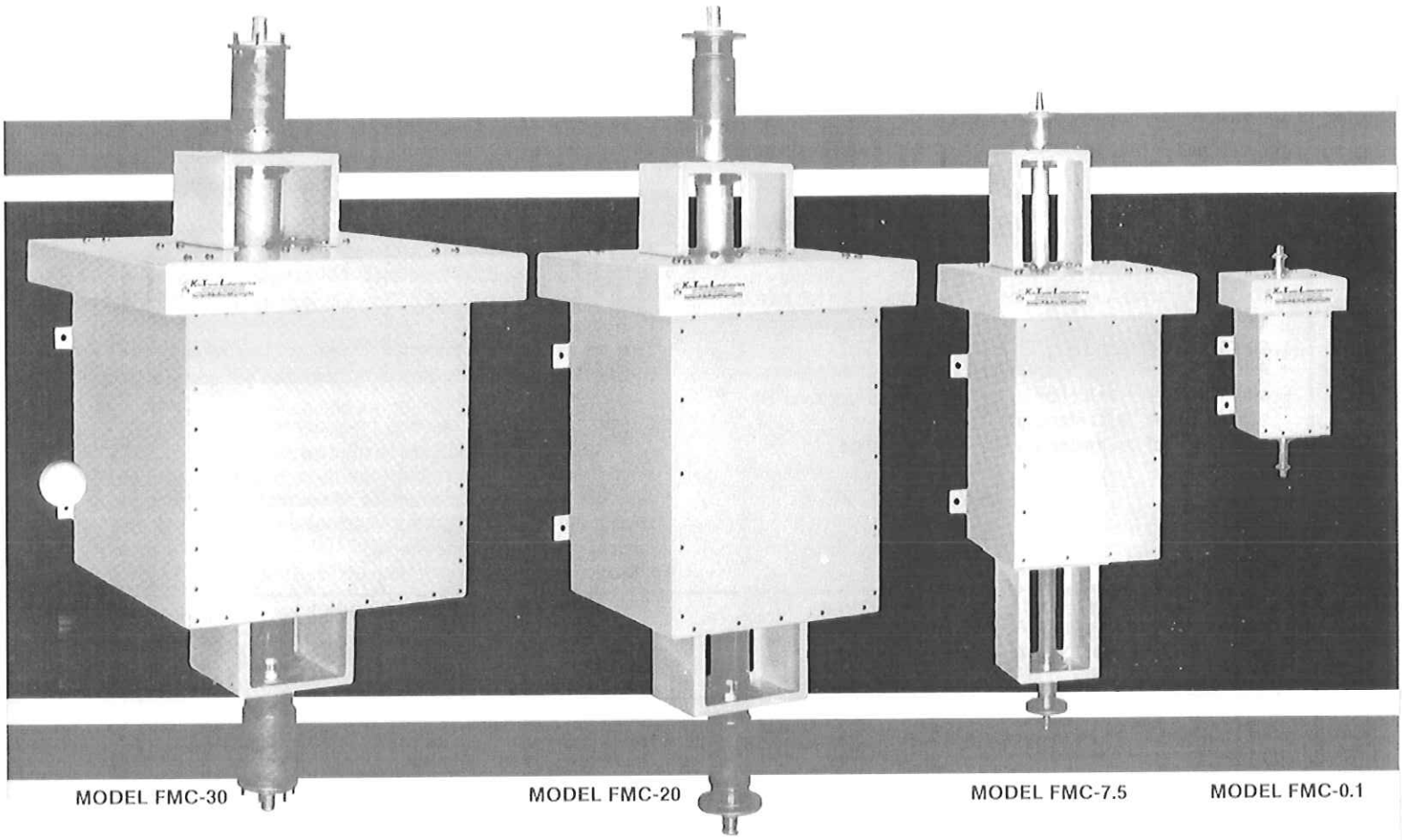
EBA 392

Bid spec	Response	
Antenna		
1. General Description		
1.1 Antenna shall operate on a frequency of 88.5 MHz.	Comply	
1.2 Antenna shall be five bays	Comply,	**~~please see alternative 2 bay ante~~
1.2.1 Antenna shall utilize full wave spacing.	Comply	
1.2.2 Polarization shall be vertical only	Comply	
1.2.3 Antenna system must deliver a power gain that will result in a 50 kW ERP using a maximum transmitter power of 10 kW.	Comply,	**~~please see alternative 2 bay ante~~
1.3 Assembled antenna must accept 10 kW at 88.5	Comply,	**~~please see alternative 2 bay ante~~
1.3.1 No beam tilt is requested	Comply	
1.3.2 Input connector shall be at vendors discretion	Comply	
1.3.2.1 All components must be rated to accommodate a power level greater than 10 kW	Comply	
1.3.3 Entire antenna and feed system must be pressurizable	Comply	
1.3.4 Antenna shall be equipped with anti icing radomes	Comply	
1.3.4.1 Antenna heaters will not be acceptable	Comply	
1.3.5 Antenna will be side mounted with a center of radiation of 54 meters on a self supporting AM tower	Comply	
1.3.5.1 Tower orientation is defined in Attachment2	Understood	
1.3.5.2 Tower Isolation	Understood	
1.3.6 The tower is an insulated base AM facility	Understood	
1.3.7 Vendor shall provide an isolator to allow the FM antenna to be attached to the tower	Understood	
1.3.7.1 Isolator shall be rated greater than 10 kW input power.	Understood	
1.3.7.2 Isolator shall pass dehydrated air to the transmission line going up the tower	Understood	
1.3.8 Vendor shall provide transmission line from the isolator to the transmitter inside the bldg.	Understood	
1.4 Certification		
1.4.1 The mounted antenna must meet the azimuthal pattern described in the attached drawings and table.	Comply	
1.4.1.1 Azimuthal pattern shall be verified by range testing or field measurements of tha installed antenna	Comply	
1.4.1.1.1 Pattern Proof	Comply	
1.4.1.1.2 Description of Test Facilities	Comply	
1.4.1.2 Antenna shall be field matched to meet a VSWR of 1.1:1 or better	Comply	Note: antenna system includes fin

10201 Rodney Blvd.
Pineville, NC 28134
704-889-4540

3. Mounting Hardware	
3.1 The attached fabrication drawing lists the material size for the legs and cross members	Understood
3.2 The orientation of the tower is defined in Attch 2	Understood
3.2.1.1 Antenna must be supported at a distance from the tower to minimize pattern interference	Comply
3.2.1.2 Antenna must be supported in a manner that minimizes flexing at interbay connections	Comply
3.2.1.3 Antirotation support shall be provided and fabricated to absolutely orient the antenna in the proper azimuth	Comply, with exceptions: Mounting is only as the details provided to antenna vendor. Bette resolution tower drawings are required for th of antenna mounting..
3.2.1.4 All mounting hardware must be galvanized or stainless steel	Comply
3.2.1.5 All hardware shall meet or exceed EIA/TIA RS 222G	Comply

VERSATILE KTL ISOCOUPLERS



MODEL FMC-30 MODEL FMC-20 MODEL FMC-7.5 MODEL FMC-0.1

Kintronic Laboratories' Isocouplers
provide versatility to existing AM radiating elements by allowing for
installation of transmit-receive/FM/TV antennas operating in the frequency range of
30-1000 MHz without disrupting AM antenna characteristics.

Kintronic Laboratories also maintains a stock of accessory items required for isocoupler installation,
including transmission line, end fittings and cable grounding clamps.

KinTronic Laboratories

P.O. Box 845 • Bristol, TN 37621 • Phone (423) 878-3141 • Fax (423) 878-4224

SPECIALIZING IN THE DESIGN & MANUFACTURE OF CUSTOM ANTENNA SYSTEMS

FEATURES – TRANSMIT/RECEIVE APPLICATIONS

MODEL FMC-0.5A

- Install at base of AM tower.
- Permits installation of broadcast antenna and connecting transmission line.
- Will handle full 1500 W operation at 30 to 87 MHz.
- Effect on base input impedance negligible for most single radiators or directional elements (less than 100 uuf shunting capacity).
- Transmission line may be fastened to tower for its full length, permitting tower to operate with normal radiation characteristics.
- Adds 20 db or more attenuation at second harmonic to attain high level reduction of interference to low level TV signals (meets FCC standards).
- Weatherproof enclosure, compact construction.

MODEL FMC-0.1

- Install at base of AM tower.
- Permits installation of Studio-to-Transmitter (STL) antenna and connecting transmission line.
- Will handle full 100 W operation at 700 to 1000 MHz.
- Effect on base input impedance negligible for most single radiators or directional elements (less than 100 uuf shunting capacity).
- STL transmission line may be fastened to tower for its full length, permitting tower to operate with normal radiation characteristics.
- Adds 20 db or more attenuation at second harmonic to attain high level reduction of interference to low level TV signals (meets FCC standards).
- Weatherproof enclosure, compact construction.

MODEL FMC-0.5B (FMC-1.0LPTV)

- Install at base of AM tower.
- Permits installation of broadcast antenna and connecting transmission line.
- Will handle full 500 W (1000 W) operation at 150 to 699 MHz (174 to 482 MHz, Channels 7-15: Note LPTV Units for higher channels are available with reduced power rating.
- Effect on base input impedance negligible for most single radiators or directional elements (less than 100 uuf shunting capacity).
- Transmission line may be fastened to tower for its full length, permitting tower to operate with normal radiation characteristics.
- Adds 20 db or more attenuation at second harmonic to attain high level reduction of interference to low level TV signals (meets FCC standards).
- Weatherproof enclosure, compact construction.

MODEL FMC-0.1X (Isocoupler for High Power Paging Transmitters)

- Install at base of AM tower.
- Permits installation of high high power Paging System antenna and associated transmission line.
- Will handle full 300 W operation at 700 to 975 MHz.
- Total operational bandwidth to yield less than 1.05:1 VSWR is 3 MHz.
- Effect on base input impedance negligible for most single radiators or directional elements (less than 100 uuf shunting capacity).
- Paging transmission line may be fastened to tower for its full length, permitting tower to operate with normal radiation characteristics.
- Adds 20 db or more attenuation at second harmonic to attain high level reduction of interference to low level TV signals (meets FCC standards).
- Weatherproof enclosure, compact construction.

WHEN ORDERING AN ISOCOUPLER PLEASE SPECIFY THE FOLLOWING:

- TOWER TYPE
  - GUYED
  - SELF-SUPPORTED
- TOWER HEIGHT IN METERS
- AM TRANSMITTER POWER (KW)
- DESIRED BANDWIDTH (+/- MHZ)
- FOR STL APPLICATIONS SPECIFY IF ISOCOUPLER WILL BE USED FOR TRANSMIT OR RECEIVE
- SPECIFY ISOCOUPLER CONNECTOR TYPE REQUIRED

SPECIFICATIONS

ELECTRICAL SPECIFICATIONS	MODEL FMC-0.5A	MODEL FMC-1.0LPTV	MODEL FMC-0.5B	MODEL FMC-0.1	MODEL FMC-0.1X
Nominal Power Rating	500 W	1000 W	500 W	100 W	300 W
Tunable Range	30 to 87 MHz	174 to 149 MHz	150 to 699 MHz	700 to 975 MHz	700 to 975 MHz
Bandwidth (MHz)	6	6	6	6	3
Insertion Loss at Fundamental Frequency	Less than 0.8 db	Less than 0.8 db	Less than 0.8 db	Less than 0.8 db	Less than 0.8 db
Insertion Loss at Second Harmonic	20 db or greater	20 db or greater	20 db or greater	20 db or greater	20 db or greater
Input Impedance	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms
Output Impedance	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms
Capacity between Input & Output Circuit	Less than 100 uuf	Less than 100 uuf	Less than 100 uuf	Less than 100 uuf	Less than 100 uuf
VSWR within specified bandwidth with a standard load imedance.	Less than 1.05 to 1	Less than 1.05 to 1	Less than 1.05 to 1	Less than 1.05 to 1	Less than 1.05 to 1
Input and Output Connections	Type N Female or 7/8" EIA Male Flange	Type N Female or 7/8" EIA Male Flange	Type N Female	Type N Female	Type N Female
Peak Voltage Rating (KV)	18	18	18	18	18

* Higher Frequency Operation Available at Reduced Power Rating

FEATURES – FM APPLICATIONS

MODEL FMC-1.5

- Install at base of AM tower.
- Permits installation of FM antenna and connecting transmission line on hot broadcast towers for simultaneous AM and FM operation on the same tower.
- Will handle full 1500 W operation at 88 to 149 MHz.
- Effect on base input impedance negligible for most single radiators or directional elements (less than 100 uuf shunting capacity).
- FM transmission line may be fastened to tower for its full length, permitting tower to operate with normal radiation characteristics.
- Adds 20 db or more attenuation at second harmonic to attain high level reduction of interference to low level TV signals (meets FCC standards).
- Weatherproof enclosure, compact construction.

MODEL FMC-7.5

- Install at base of AM tower.
- Permits installation of FM antenna and connecting transmission line on hot broadcast towers for simultaneous AM and FM operation on the same tower.
- Will handle full 7.5 KW operation at 88 to 108 MHz.
- Effect on base input impedance negligible for most single radiators or directional elements (less than 150 uuf shunting capacity).
- FM transmission line may be fastened to tower for its full length, permitting tower to operate with normal radiation characteristics.
- Adds 20 db or more attenuation at second harmonic to attain high level reduction of interference to low level TV signals (meets FCC standards).
- Units may be pressurized at 5 PSI and pressure will be conducted through unit to the output line.
- Weatherproof enclosure, compact construction.
- Often cheaper to use FMC-7.5 unit than to isolate and tune FM transmission line on the AM tower.

MODEL FMC-20

- Install at base of AM tower.
- Permits installation of FM antenna and connecting transmission line on hot broadcast towers for simultaneous AM and FM operation on the same tower.
- Will handle full 20 KW operation at 88 to 108 MHz.
- Effect on base input impedance negligible for most single radiators or directional elements (less than 150 uuf shunting capacity).
- FM transmission line may be fastened to tower for its full length, permitting tower to operate with normal radiation characteristics.
- Adds 20 db or more attenuation at second harmonic to attain high level reduction of interference to low level TV signals (meets FCC standards).
- Units may be pressurized at 5 PSI and pressure will be conducted through unit to the output line.
- Weatherproof enclosure, compact construction.
- Often cheaper to use FMC-20 unit than to isolate and tune FM transmission line on the AM tower.

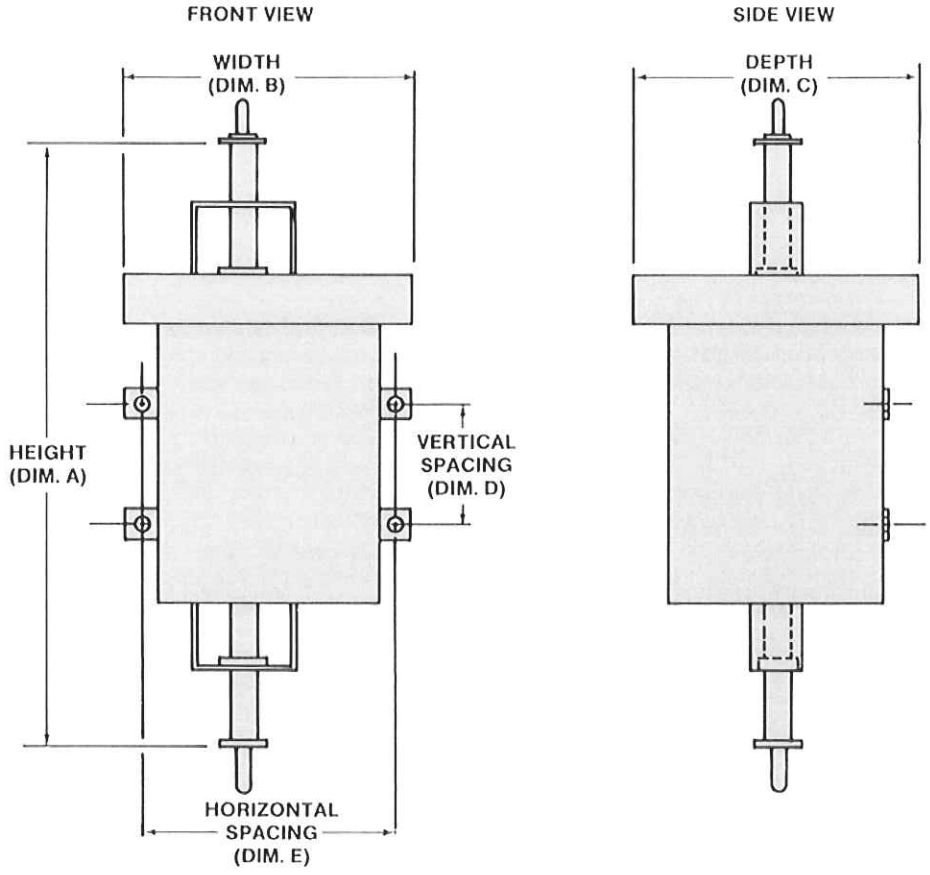
MODEL FMC-30

- Install at base of AM tower.
- Permits installation of FM antenna and connecting transmission line on hot broadcast towers for simultaneous AM and FM operation on the same tower.
- Will handle full 30 KW operation at 88 to 108 MHz.
- Effect on base input impedance negligible for most single radiators or directional elements (less than 150 uuf shunting capacity).
- FM transmission line may be fastened to tower for its full length, permitting tower to operate with normal radiation characteristics.
- Adds 20 db or more attenuation at second harmonic to attain high level reduction of interference to low level TV signals (meets FCC standards).
- Units may be pressurized at 5 PSI and pressure will be conducted through unit to the output line.
- Weatherproof enclosure, compact construction.
- Often cheaper to use FMC-30 unit than to isolate and tune FM transmission line on the AM tower.

SPECIFICATIONS

ELECTRICAL SPECIFICATIONS	MODEL FMC-1.5	MODEL FMC-7.5	MODEL FMC-20	MODEL FMC-30
Nominal Power Rating	1500 W	7.5 KW	20 KW	30 KW
Tunable Range	88 to 149 MHz	88 to 108 MHz	88 to 108 MHz	88 to 108 MHz
Bandwidth (MHz)	6	3	3	3
Insertion Loss at Fundamental Frequency	Less than 0.2 db	Less than 0.2 db	Less than 0.2 db	Less than 0.2 db
Insertion Loss at Second Harmonic	20 db or greater	20 db or greater	20 db or greater	20 db or greater
Input Impedance	50 ohms	50 ohms	50 ohms	50 ohms
Output Impedance	50 ohms	50 ohms	50 ohms	50 ohms
Capacity between Input & Output Circuit	Less than 100 uuf	Less than 150 uuf	Less than 150 uuf	Less than 150 uuf
VSWR within specified bandwidth with a standard load imedance.	Less than 1.05 to 1	Less than 1.05 to 1	Less than 1.05 to 1	Less than 1.05 to 1
Input and Output Connections	Type N Female or 7/8" EIA Male Flange	1-5/8" EIA Male Flange	3-1/8" EIA Male Flange	3-1/8" EIA Male Flange
Peak Voltage Rating (KV)	22	30	30	41

DIMENSIONS



MECHANICAL SPECIFICATIONS	MODEL FMC-0.5A	MODEL FMC-1.5	MODEL FMC-0.5B FMC-1.0LPTV	MODEL FMC-0.1 FMC-0.1X	MODEL FMC-7.5	MODEL FMC-20	MODEL FMC-30
Height (DIM. A)	34"	28"	24"	18"	43"	55"	64"
Width (DIM. B)	13"	12"	12"	8"	16"	22"	30"
Depth (DIM. C)	13"	12"	12"	8"	16"	22"	30"
Net Weight (Approx.)	35 lb.	25 lb.	25 lb.	10 lb.	70 lb.	125 lb.	140 lb.
Finish	Frost White	Frost White	Frost White	Frost White	Frost White	Frost White	Frost White
MOUNTING DIMENSIONS							
Holes	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Vertical spacing (DIM. D)	13'	8-1/2"	4-1/2"	5"	12-1/4"	14"	14-1/2"
Horizontal spacing (DIM. E)	11-1/2"	9-1/2"	9-1/2"	7-1/2"	13-3/4"	19-1/4"	25-1/2"

ISOCOUPLER ORDERING INFORMATION

For additional information including price and delivery,
please contact Kintronic Laboratories at (423) 878-3141
Office hours are 8:30 AM - 5:30 PM EST M-F

WEB SITE: http://www.kintronic.com E MAIL:ktl @ kintronic.com

KinTronic Laboratories

P.O. Box 845 • Bristol, TN 37621 • Phone (423) 878-3141 • Fax (423) 878-4224

INSTALLATION INSTRUCTIONS
KTL MODEL FMC-7.5, 10, 20, 30 ISOCOUPLER

- **Prior to Installation of Isocoupler Please Check Tower Ball Gap Setting.**

  Operate AM Transmitter on 125% Positive Peak Modulation, and set the ball gap where arcing begins to occur. Then increase the gap an additional 1/8" above the value for 125% modulation peaks.

General Description

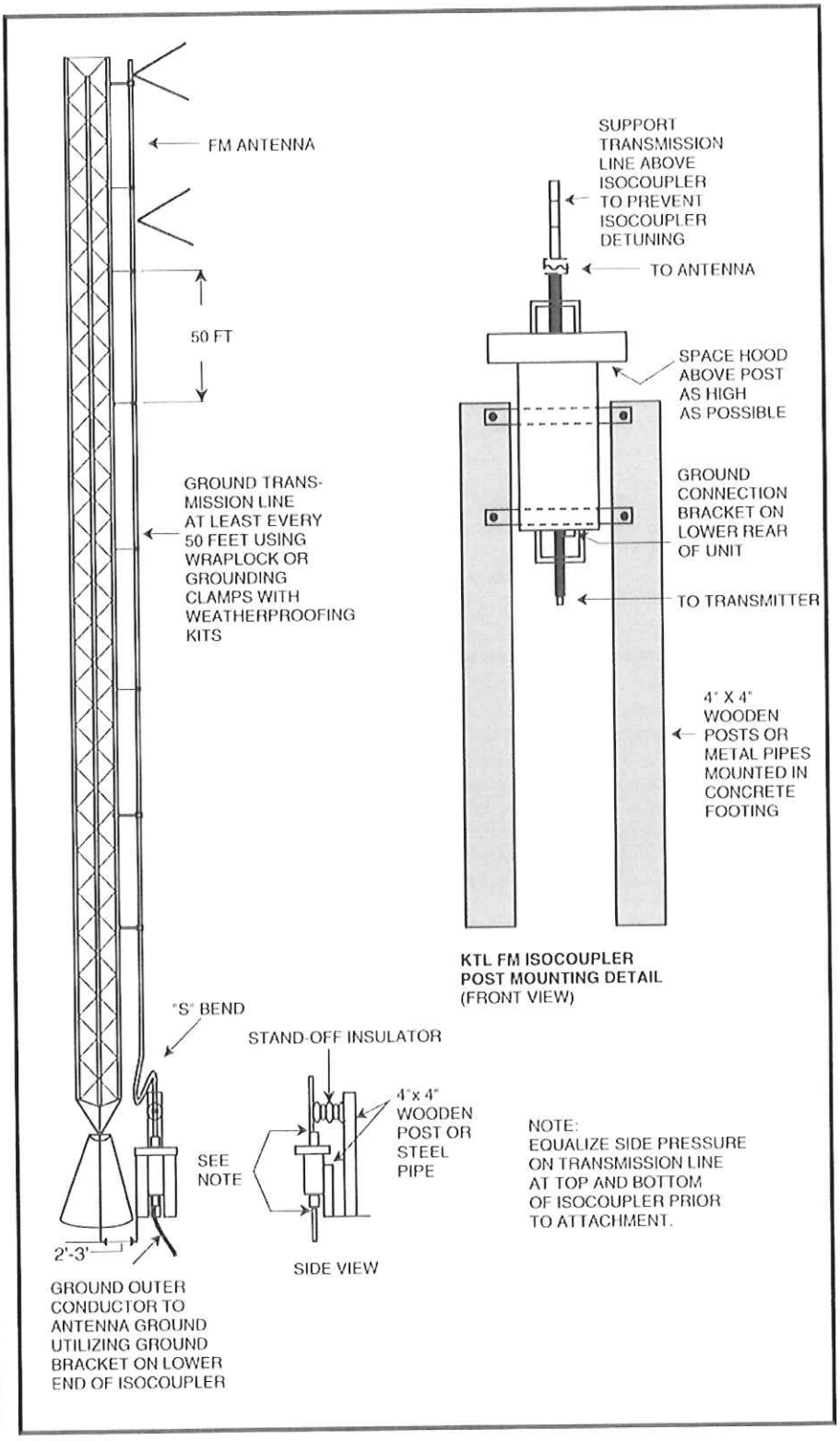
The Kintronics FM Isocoupler is a device for use in isolating the FM feed line on an AM tower from ground so that the transmission line outer conductor may be grounded to the tower and also connected to the earth ground after leaving the tower. This is accomplished by use of a double tuned transformer having less than 150 uufd capacity between primary and secondary windings. The top coaxial line section and the housing hood are made to operate at the potential of the AM tower and the main enclosure and lower coaxial line section will operate at earth ground potential.

Recommended Installation Procedure

Each FM isocoupler should be mounted in a vertical position with the hood at the top. The vertical height should be such as to allow the input and output connecting lines to approach the connectors without putting sidewise stress or twist on the input and output connections. CAUTION: UNDER NO CIRCUMSTANCES MUST THE LINE CLAMPS ON THE UNIT BE LOOSENED. TWISTING THE LINES ON THE UNIT WILL AFFECT THE VSWR. Two 4" x 4" treated wooden posts bolted to the main body of the unit will provide an adequate mounting. The lower line section should be connected to the AM earth ground system for the tower via a bracket located on the lower end of the isocoupler. DO NOT ATTEMPT TO REMOVE THE CENTER CONDUCTOR FROM THE INPUT AND OUTPUT LINES. The tower ground system should be attached to the grounding bracket on the bottom end of the isocoupler using copper strap.

Make Water-Resistant Connections

All interconnecting fittings utilized in the isocoupler installation should be water-tight, i.e., a water-resistant sealant should be applied to each connection. Kintronic Laboratories will not be responsible for water damage to the isocoupler, which will cause the unit to malfunction. Every effort should be made in the installation process to prevent this problem.



KinTronic Laboratories, Inc.

P.O. Box 845 • Bristol, TN 37621 • (423) 878-3141 • FAX (423) 878-4224

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INSTALLATION INSTRUCTIONS - KTL MODEL FMC-0.1, 0.5A, 0.5B, 1.5, LPTV ISOCOUPLER

* **Prior to Installation of Isocoupler Please Check Tower Ball Gap Setting.**

  Operate AM Transmitter on 125% Positive Peak Modulation, and set the ball gap where arcing begins to occur. Then increase the gap an additional 1/8" above the value for 125% modulation peaks.

General Description

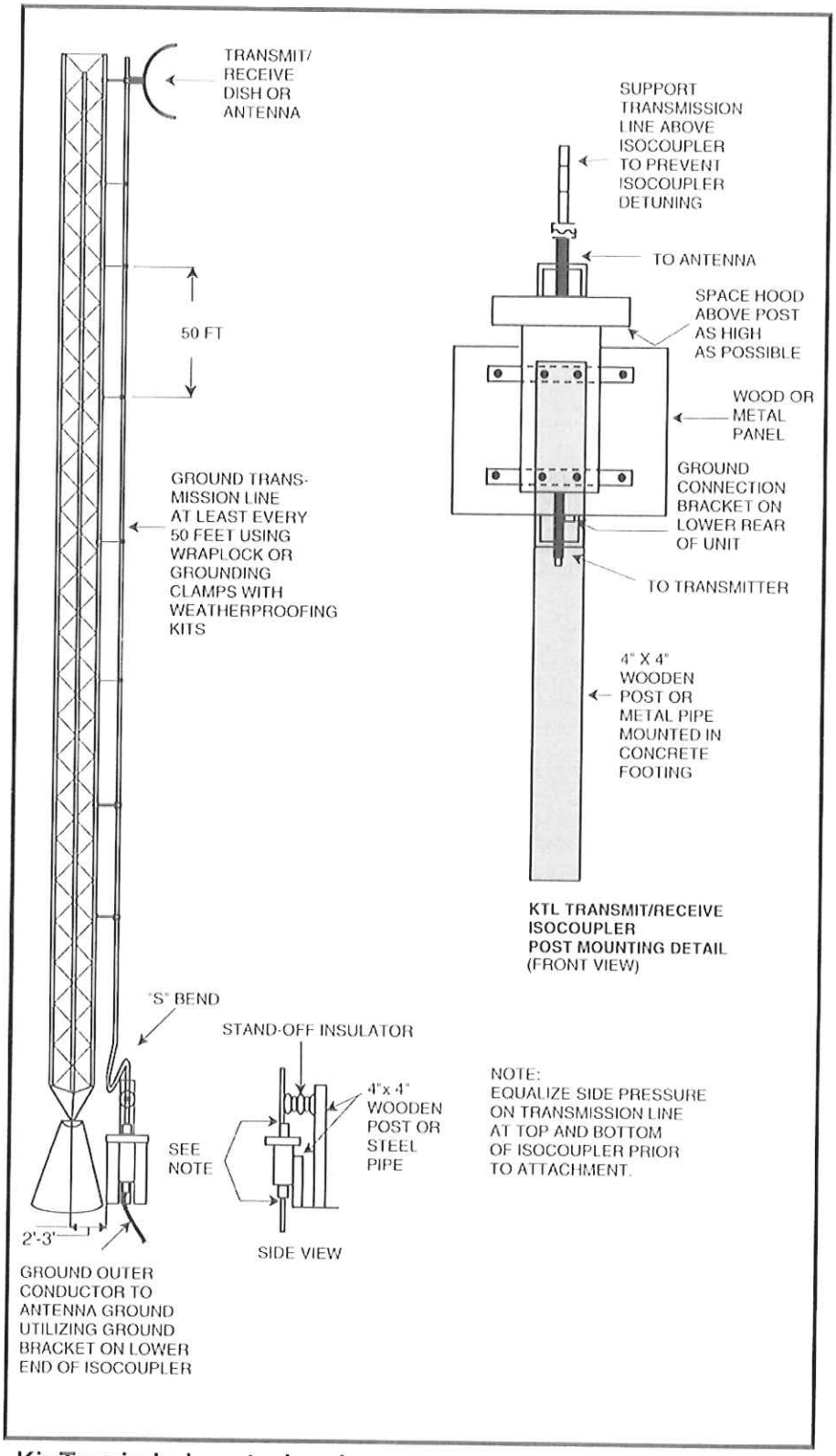
The Transmit/Receive Isocoupler is a device for use in isolating the feed line for an STL, TSL, RPU, Paging, LPTV etc. dish or antenna installed on an AM tower from ground so that the transmission line outer conductor may be grounded to the tower and also connected to the earth ground after leaving the tower. This is accomplished by use of a double tuned transformer having less than 100 uufd capacity between primary and secondary windings. The top coaxial line section and the housing hood are made to operate at the potential of the AM tower and the main enclosure and lower coaxial line section will operate at earth ground potential.

Recommended Installation Procedure

The Transmit/Receive Isocoupler should be mounted in a vertical position with the hood at the top. The vertical height should be such as to allow the input and output connecting lines to approach the connectors without putting sidewise stress or twist on the input and output connections. CAUTION: UNDER NO CIRCUMSTANCES MUST THE LINE CLAMPS ON THE UNIT BE LOOSENED. TWISTING THE LINES ON THE UNIT WILL AFFECT THE VSWR. One 4" x 4" treated wooden post with a wood or metal panel attached to it for bolting to the main body of the unit will provide an adequate mounting as shown in the illustration on this page. The lower line section should be connected to the AM earth ground system for the tower via a bracket located on the lower end of the isocoupler. DO NOT ATTEMPT TO REMOVE THE CENTER CONDUCTOR FROM THE INPUT AND OUTPUT LINES.

Make Water-Resistant Connections

All interconnecting fittings utilized in the isocoupler installation should be water-tight, i.e., a water-resistant sealant should be applied to each connection. Kintronic Laboratories will not be responsible for water damage to the isocoupler, which will cause the unit to malfunction. Every effort should be made in the installation process to prevent this problem.



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