

Construction Permit Special Operating Conditions

Construction Permit

**United States of America
FEDERAL COMMUNICATIONS COMMISSION
FM BROADCAST STATION CONSTRUCTION PERMIT**

Authorizing Official:

Official Mailing Address:

FAMILY STATIONS, INC.
4135 NORTHGATE BLVD STE 1
SACRAMENTO CA 95834

Rodolfo F. Bonacci
Assistant Chief
Audio Division
Media Bureau

Facility ID: 89308

Grant Date: June 07, 2005

Call Sign: KFRP

The authority granted herein has
no effect on the expiration date
of the underlying construction
permit.

Permit File Number: BMPED-20050302AFD

This permit modifies permit no.: BPED-19971202MB

Subject to the provisions of the Communications Act of 1934, as amended, subsequent acts and treaties, and all regulations heretofore or hereafter made by this Commission, and further subject to the conditions set forth in this permit, the permittee is hereby authorized to construct the radio transmitting apparatus herein described. Installation and adjustment of equipment not specifically set forth herein shall be in accordance with representations contained in the permittee's application for construction permit except for such modifications as are presently permitted, without application, by the Commission's Rules.

Commission rules which became effective on February 16, 1999, have a bearing on this construction permit. See Report & Order, Streamlining of Mass Media Applications, MM Docket No. 98-43, 13 FCC RCD 23056, Para. 77-90 (November 25, 1998); 63 Fed. Reg. 70039 (December 18, 1998). Pursuant to these rules, this construction permit will be subject to automatic forfeiture unless construction is complete and an application for license to cover is filed prior to expiration. See Section 73.3598.

Equipment and program tests shall be conducted only pursuant to Sections 73.1610 and 73.1620 of the Commission's Rules.

Construction Permit Special Operating Conditions

Construction Permit

Callsign: KFRP Permit No.: BMPED-20050302AFD

Name of Permittee: FAMILY STATIONS, INC.

Station Location: CA-COALINGA

Frequency (MHz): 90.7

Channel: 214

Class: B

Hours of Operation: Unlimited

Transmitter: Type Accepted. See Sections 73.1660, 73.1665 and 73.1670 of the Commission's Rules.

Transmitter output power: As required to achieve authorized ERP.

Antenna type: Directional

Antenna Coordinates: North Latitude: 35 deg 55 min 39 sec
West Longitude: 120 deg 22 min 46 sec

	Horizontally Polarized Antenna	Vertically Polarized Antenna
Effective radiated power in the Horizontal Plane (kW):		2.50
Height of radiation center above ground (Meters):		29
Height of radiation center above mean sea level (Meters):		1030
Height of radiation center above average terrain (Meters):		382
Antenna structure registration number: Not Required		
Overall height of antenna structure above ground: 29 Meters		
Obstruction marking and lighting specifications for antenna structure:		
It is to be expressly understood that the issuance of these specifications is in no way to be considered as precluding additional or modified marking or lighting as may hereafter be required under the provisions of Section 303(g) of the Communications Act of 1934, as amended.		
None Required		

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Permit No.: BMPED-20050302AFD

Special operating conditions or restrictions:

- 1 BEFORE PROGRAM TESTS ARE AUTHORIZED, permittee shall submit the results of a complete proof-of-performance to establish the horizontal plane radiation patterns for both the horizontally and vertically polarized radiation components. This proof-of-performance may be accomplished using the complete 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 using a carefully manufactured scale model of the entire antenna, or individual bays therefrom, mounted on an equally scaled model of the proposed supporting structure, including all appurtenances. Engineering exhibits should include a description of the antenna testing facilities and equipment employed, including appropriate photographs or sketches and a description of the testing procedures, including scale factor, measurements frequency, and equipment calibration.
- 2 BEFORE PROGRAM TESTS ARE AUTHORIZED, permittee shall submit an affidavit from a licensed surveyor to establish that the directional antenna has been oriented at the proper azimuth.
- 3 BEFORE PROGRAM TESTS ARE AUTHORIZED, permittee/licensee shall submit an affidavit that the installation of the directional antenna system was overseen by a qualified engineer. This affidavit shall include a certification by the engineer that the antenna was installed pursuant to the manufacturer's instructions and list the qualifications of the certifying engineer.
- 4 The relative field strength of neither the measured horizontally nor vertically polarized radiation component shall exceed at any azimuth the value indicated on the composite radiation pattern authorized by this construction permit.

A relative field strength of 1.0 on the composite radiation pattern herein authorized corresponds to the following effective radiated power:

2.50 kilowatts.

Principal minima and their associated field strength limits:

180 - 190 degrees True: 0.380 kilowatt
- 5 The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic fields in excess of FCC guidelines.
- 6 Waiver of 47 C.F.R. Section 73.1125 was previously granted to allow operation of this facility as a satellite operation of the following station:

KEDR(FM), Facility ID# 20746, Sacramento, California

*** END OF AUTHORIZATION ***

Construction Permit Special Operating Conditions

Special Operating Conditions 1 & 4

Shively Labs

a division of Howell Laboratories, Inc.
- An Employee-Owned Company -

P. O. Box 389 Harrison Rd.,
Bridgton, Maine 04009 USA

(207) 647-3327
888-SHIVELY
Fax: (207) 647-8273
E-mail: sales@shively.com
Web site: www.shively.com

S.O. 23867

Report of Test 6513-1/2-DA

for

FAMILY STATIONS, INC.

KFRP 90.7 MHz COALINGA, CA

OBJECTIVE:

The objective of this test was to demonstrate the directional characteristics of a 6513-1/2-DA to meet the needs of KFRP and to comply with the requirements of the FCC construction permit, file number BMPED-20050302AFD.

RESULTS:

The measured azimuth pattern for the 6513-1/2-DA is shown in Figure 1. Figure 1A shows the Tabulation of the Vertical Polarization. The calculated elevation pattern of the antenna is shown in Figure 3. Construction permit file number BMPED-20050302AFD indicates that the Vertical radiation component shall not exceed 2.50 kW at any azimuth and is restricted to the following values at the azimuths specified:

180 - 190 Degrees T: .380 kW

From Figure 1, the maximum radiation of the Vertical component occurs at 077 Degrees T to 088 Degrees T and at 256 Degrees T to 269 Degrees T. At the restricted azimuth of 180 Degrees T the Vertical component is 8.519 dB down from the maximum of 2.50 kW, or 0.352 kW.

Construction Permit Special Operating Conditions

Special Operating Conditions 1 & 4

Test Report 6513-1/2-DA
KFRP
Page Two

The R.M.S. of the Vertical component is 0.683. The total Vertical power gain is 2.055. See Figure 4 for calculations. The R.M.S. of the FCC composite pattern is 0.794. Therefore this Pattern complies with the FCC requirement of 73.316(c)(2)(ix)(A).

METHOD OF DIRECTIONALIZATION:

The 6513-1/2-DA was mounted on a pole of exact scale to a 6" pole. The spacing of the antenna to the pole was varied to achieve the vertical pattern shown in Figure 1. See Figure 2 for mechanical details.

METHOD OF MEASUREMENT:

As allowed by the construction permit, file number BMPED-20050302AFD, a single level of the 6513-1/2-DA was set up on the Howell Laboratories scale model antenna pattern measuring range. A scale of 4.5:1 was used.

SUPERVISION:

Mr. Surette was graduated from Lowell Technological Institute, Lowell, Massachusetts in 1973 with the degree of Bachelor of Science in Electrical Engineering. He has been directly involved with design and development of broadcast antennas, filter systems and RF transmission components since 1974, as an RF Engineer for six years with the original Shively Labs in Raymond, ME and for a short period of time with Dielectric Communications. He is currently an Associate Member of the AFCCE and a Senior Member of IEEE. He has authored a chapter on filters and combining systems for the latest edition of the CRC Electronics Handbook and for the 9th Edition of the NAB Handbook.

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EQUIPMENT:

The scale model pattern range consists of a wooden rotating pedestal equipped with a position indicator. The scale model bay is placed on the top of this pedestal and is used in the transmission mode at approximately 20 feet above ground level. The receiving corner reflector is spaced 50 feet away from the rotating pedestal at the same level above ground as the transmitting model. The transmitting and receiving signals are carried to a control building by means of RG-9/U double shielded coax cable.

The control building is equipped with:

Hewlett Packard Model 8753 Network Analyzer
PC Based Controller
Hewlett Packard 7550A Graphics Plotter

The test equipment is calibrated to ANSI/NCSL Z540-1-1994.

TEST PROCEDURES:

The corner reflector is mounted so that the horizontal and vertical azimuth patterns are measured independently by rotating the corner reflector by 90 degrees. The network analyzer was set to 408.15 MHz. Calibrated pads are used to check the linearity of the measuring system. For example, 6 dB padding yields a scale reading of 50 from an unpadded reading of 100 in voltage. From the recorded patterns, the R.M.S. values are calculated and recorded as shown in Figure 1.

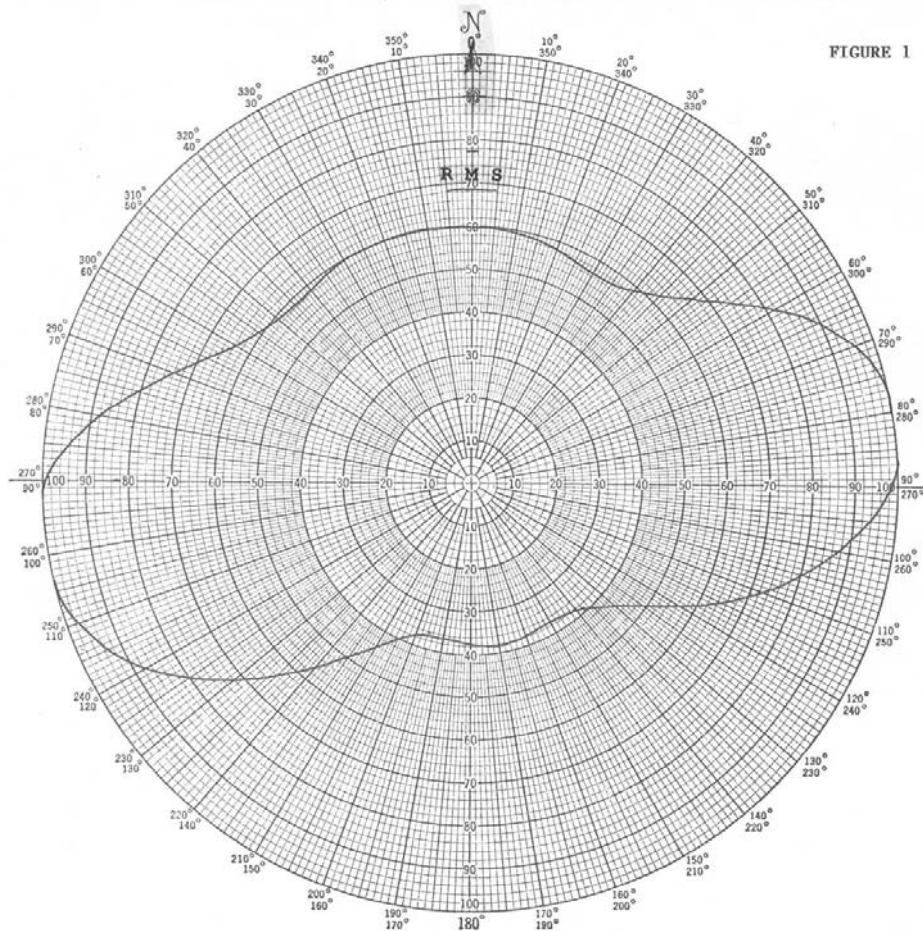
Respectfully submitted by:



Robert A. Surette
Manager of RF Engineering
S/O 23867
October 26, 2005

Construction Permit Special Operating Conditions

Special Operating Conditions 1 & 4



Shively Labs

PROJECT NAME	KFRP COALINGA, CA	ANTENNA TYPE	6513-1/2-DA
PROJECT NUMBER	23867	DATE	3/30/05
MODEL (<input checked="" type="checkbox"/>) FULL SCALE (<input type="checkbox"/>) FREQUENCY	408.15/90.7 MHz	PATTERN TYPE	DIRECTIONAL AZIMUTH
POLARIZATION	VERTICAL	REMARKS	SEE FIGURE 2 FOR MECHANICAL
CURVE PLOTTED IN: VOLTAGE (<input checked="" type="checkbox"/>) POWER (<input type="checkbox"/>) DB (<input type="checkbox"/>)		DETAILS	
OBSERVER	RAS		

SHIVELY LABS, A DIVISION OF HOWELL LABORATORIES, INC. BRIDGTON, ME 04009 (207) 647-3327

Construction Permit Special Operating Conditions

Special Operating Conditions 1 & 4

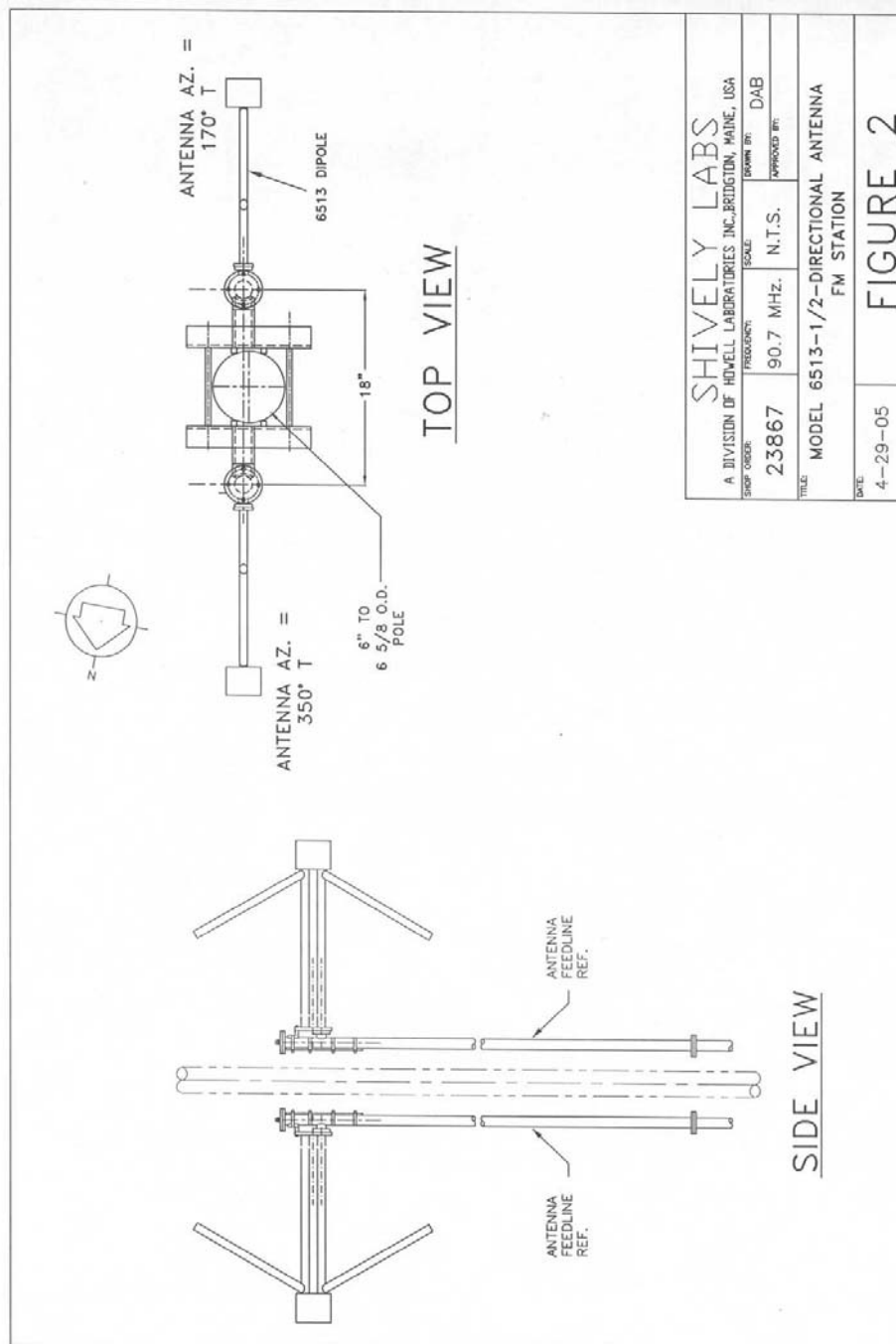
Figure 1B

S/O 23867
TABULATION OF VERTICAL POLARIZATION
KFRP COALINGA, CA

DEGREE	RELATIVE FIELD	DEGREE	RELATIVE FIELD
0	0.600	180	0.375
10	0.595	190	0.370
20	0.580	200	0.380
30	0.565	210	0.445
40	0.590	220	0.565
45	0.620	225	0.640
50	0.675	230	0.720
60	0.820	240	0.875
70	0.955	250	0.975
80	1.000	260	1.000
90	0.985	270	0.990
100	0.875	280	0.880
110	0.730	290	0.740
120	0.570	300	0.635
130	0.440	310	0.590
135	0.405	315	0.585
140	0.385	320	0.585
150	0.375	330	0.600
160	0.380	340	0.600
170	0.385	350	0.600

Construction Permit Special Operating Conditions

Special Operating Conditions 1 & 4



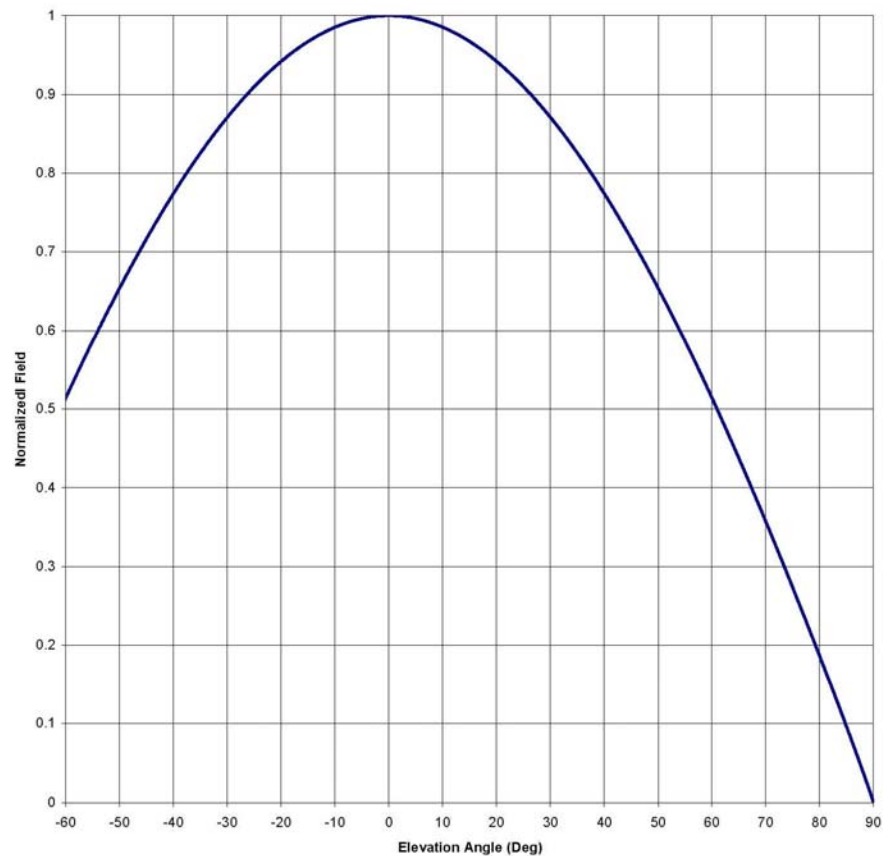
Construction Permit Special Operating Conditions

Special Operating Conditions 1 & 4

Antenna Mfg.: Shively Labs
Antenna Type: 6513-1/2-DA
Station: KFRP
Frequency: 90.7
Channel #: 214
Figure: 3

Date: 3/25/2005

Beam Tilt	0	
Gain (Max)	2.055	3.128 dB
Gain (Horizon)	2.055	3.128 dB



Construction Permit Special Operating Conditions

Special Operating Conditions 1 & 4

Antenna Mfg.: Shively Labs
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 Figure: 3

Date: 3/25/2005

Beam Tilt 0
 Gain (Max) 2.055 3.128 dB
 Gain (Horizon) 2.055 3.128 dB

Angle of Depression (Deg)	Relative Field	Angle of Depression (Deg)	Relative Field	Angle of Depression (Deg)	Relative Field	Angle of Depression (Deg)	Relative Field
-90	0.000	-44	0.729	0	1.000	46	0.705
-89	0.021	-43	0.741	1	1.000	47	0.693
-88	0.040	-42	0.752	2	0.999	48	0.680
-87	0.059	-41	0.763	3	0.999	49	0.667
-86	0.078	-40	0.774	4	0.998	50	0.654
-85	0.096	-39	0.785	5	0.996	51	0.641
-84	0.114	-38	0.796	6	0.995	52	0.628
-83	0.133	-37	0.806	7	0.993	53	0.614
-82	0.151	-36	0.816	8	0.991	54	0.600
-81	0.168	-35	0.826	9	0.988	55	0.586
-80	0.186	-34	0.835	10	0.985	56	0.572
-79	0.204	-33	0.845	11	0.982	57	0.558
-78	0.221	-32	0.854	12	0.979	58	0.544
-77	0.239	-31	0.862	13	0.975	59	0.529
-76	0.256	-30	0.871	14	0.971	60	0.514
-75	0.273	-29	0.879	15	0.967	61	0.499
-74	0.290	-28	0.887	16	0.963	62	0.484
-73	0.307	-27	0.895	17	0.958	63	0.469
-72	0.324	-26	0.903	18	0.953	64	0.453
-71	0.341	-25	0.910	19	0.948	65	0.437
-70	0.357	-24	0.917	20	0.942	66	0.422
-69	0.373	-23	0.924	21	0.936	67	0.406
-68	0.390	-22	0.930	22	0.930	68	0.390
-67	0.406	-21	0.936	23	0.924	69	0.373
-66	0.422	-20	0.942	24	0.917	70	0.357
-65	0.437	-19	0.948	25	0.910	71	0.341
-64	0.453	-18	0.953	26	0.903	72	0.324
-63	0.469	-17	0.958	27	0.895	73	0.307
-62	0.484	-16	0.963	28	0.887	74	0.290
-61	0.499	-15	0.967	29	0.879	75	0.273
-60	0.514	-14	0.971	30	0.871	76	0.256
-59	0.529	-13	0.975	31	0.862	77	0.239
-58	0.544	-12	0.979	32	0.854	78	0.221
-57	0.558	-11	0.982	33	0.845	79	0.204
-56	0.572	-10	0.985	34	0.835	80	0.186
-55	0.586	-9	0.988	35	0.826	81	0.168
-54	0.600	-8	0.991	36	0.816	82	0.151
-53	0.614	-7	0.993	37	0.806	83	0.133
-52	0.628	-6	0.995	38	0.796	84	0.114
-51	0.641	-5	0.996	39	0.785	85	0.096
-50	0.654	-4	0.998	40	0.774	86	0.078
-49	0.667	-3	0.999	41	0.763	87	0.059
-48	0.680	-2	0.999	42	0.752	88	0.040
-47	0.693	-1	1.000	43	0.741	89	0.021
-46	0.705	0	1.000	44	0.729	90	0.000
-45	0.717			45	0.717		

Construction Permit Special Operating Conditions

Special Operating Conditions 1 & 4

FIGURE 4

S.O. 23867

VALIDATION OF GAIN CALCULATION

KFRP COALINGA, CA

MODEL 6513-1/2-DA

Elevation Gain of 6513-1/2-DA equals 0.959

The RMS values are calculated utilizing the data of a planimeter.

Vertical Azimuth Gain equals $1/(\text{RMS})^2$
 $1/(0.683)^2 = 2.143$

* Total Vertical Gain is Elevation Gain times Azimuth Gain
 $0.959 \times 2.143 = 2.055$

ERP divided by Vertical Gain equals Antenna Input Power
 $2.50 \text{ kW} \div 2.055 = 1.216 \text{ kW}$

Construction Permit Special Operating Conditions

Special Operating Condition 2

Volbrecht Surveys

Post Office Box 299, San Luis Obispo, CA 93406
(805) 781-9296 Fax (805) 781-9017

Ms. Linda Adams
Family Stations, Inc.
4135 Northgate Blvd., Ste 1
Sacramento, CA 95834

October 7, 2005

Subject: Table Mt., Parkfield

Dear Linda,

As requested, this firm has completed an as built survey of the Table Mountain radio antenna for station KFRP near Coalinga, California. Field survey work was completed on October 4, 2005 using GPS equipment and a theodolite.

The main element of the subject antenna was aligned to a true azimuth of 350°.

Thank you for the opportunity to be of service and please do not hesitate to call if you should have any additional questions or concerns.

Sincerely,



Alan L. Volbrecht, PLS



Construction Permit Special Operating Conditions

Special Operating Condition 3

On October 3 & 4, 2005, I, James E. Latendorf, served as the on site representative for Family Stations, Inc. for the construction of KFRP, 90.7 Mhz, licensed to Coalinga, CA, including the antenna installation.

The antenna is a Shively model 6513-1/2-DA Vertically Polarized FM antenna designed and manufactured by Shively specifically for this installation. Shively provided site-specific installation documentation, which was followed in all detail. No on-site revisions or alterations were needed or made, either electrically or mechanically.

On the same day as the antenna installation, the orientation of the antenna system was surveyed and verified to be in accordance with the antenna manufacturer's installation instructions by the licensed surveying company of Volbrecht Surveys. The results of the surveyor have been supplied to Family Stations, Inc. separately.

I, James E. Latendorf, have been a broadcast engineer for Family Stations, Inc. for over 10 years, with experience in installation and maintenance of AM and FM radio broadcast facilities, and have held a General Class Amateur Radio License, WB6KVD, for over 25 years, and therefore I am qualified to certify that KFRP has been constructed in accordance with all pertinent specifications.



James E. Latendorf
Chief Engineer, KFRP
October 5, 2005

***Family Stations, Inc.
KFRP (CP), Coalinga, CA
302-FM License Application
BMPED-20050302AFD
Facility ID 89308***

***Exhibit 10
October 2005***

Construction Permit Special Operating Conditions

Special Operating Condition 5

The permittee/licensee in coordination with other users of the site will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic fields in excess of FCC guidelines. KFRP contact representative information will be posted at the site.