

# **KWWJ, Baytown, Texas**

**FCC Form 301, Application for Minor Change to an Existing Facility**

**April, 2023**

## **Exhibit One**

### **LOCAL RADIO MULTIPLE OWNERSHIP COMPLIANCE STATEMENT**

In addition to his ownership and control of Station KWWJ(AM), the principal of Salt of the Earth Broadcasting, Inc., owns and controls Martin Broadcasting, Inc. ("MBI"). In the Houston radio market, as determined by Nielsen Audio and reported by BIA/Kelsey, MBI is the licensee of the following radio station: Station KYOK(AM), Conroe, Texas (FIN: 40484).

According to Nielsen Audio, as reported by BIA/Kelsey, there are more than 45 commercial and non-commercial radio stations in the Houston radio market. Pursuant to Section 73.3555(a)(1) of the Commission's Rules, the ownership and control of two radio stations, in the same radio service, in a radio market with more than 45 radio stations, complies with the FCC's local radio multiple ownership rules. Consequently, the local radio multiple ownership rules does not prevent the Commission granting its consent to the instant application.

# Engineering Exhibit (Exhibit 13)

*in support of*

FCC Form 301, Application for Construction Permit

*on behalf of:*

# KWWJ

**Baytown, Texas**

Facility ID 58724  
1360 kHz 5 kW/0.8 kW DA-2 U

*licensed to:*

**Salt of the Earth Broadcasting, Inc**

*prepared April, 2023, by:*

**Michael Patton & Associates**  
**Baton Rouge, Louisiana**  
[www.michaelpatton.com](http://www.michaelpatton.com)



**Engineering Exhibit in Support of Form 301**

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FCC Form 301, Section III-A

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**Engineering Exhibit in Support of Form 301****Overview:**

Salt of the Earth Broadcasting, Inc. (“SEB”), is the licensee of Station KWWJ(AM), 1360 kHz at Baytown, Texas. SEB was the holder of Construction Permit (*BP-20191210AAB*), which expired on April 3<sup>rd</sup> of this year. This application is being filed to re-apply for the authority granted in that permit, which SEB was unable to implement before that CP’s term expired due to a number of factors and unforeseen circumstances, including the pandemic, failed buried cables, and vandalism to the array.

KWWJ operates using a directional antenna array that utilizes different day and night directional patterns. A geographical site survey (attached as **Exhibit 13-Figure 1**) was completed as part of an effort to obtain a waiver from the FAA to no longer require that the center tower be lit. Unexpectedly, the survey revealed coordinate and tower height discrepancies between the license and the long-built towers. The FAA has been notified of the coordinate correction and an updated Determination of No Hazard has been issued for all three towers.<sup>1</sup> The Antenna Structure Registrations (“ASR”) for all towers have been modified to show the corrected coordinates and heights. The corresponding ASR Numbers for each tower are shown in the Tech Box portion of FCC Form 301. *SEB* now seeks to modify its license for the purpose of correcting geographic coordinates of the center of the KWWJ array and the radiation height of the three structures. It is not known when these discrepancies first occurred. The last known tower construction was in 1985 by the prior licensee; at that time, two of the three towers were replaced after being damaged by a hurricane (see *BL-19850903AF*). SEB has made no physical changes to the towers since it became the licensee in 1988. SEB also relied on the original tower descriptions in its applications for a daytime power increase (see *BL-19960503AD.*), and there are no physical or electrical changes to the KWWJ antenna system or tower parameters proposed herein.

The licensee plans to perform a Moment Method proof of performance on the array as part of this project, and to file an amended license application based on the results of that proof.

<sup>1</sup> See FAA Study Numbers: 2014-ASW-8504-OE, 2014-ASW-8505-OE, and 2014-ASW-8506-OE.



**Engineering Exhibit in Support of Form 301****Corrected Coordinates:**

When converted to NAD27 and rounded to the nearest whole second, the site survey revealed differences of approximately one-second latitude between the actual and licensed KWWJ coordinates. The surveyed geographic coordinates of the center tower (Tower 2) are being used as the coordinates of the array. This results in an apparent minor move in a northerly direction. The licensed and corrected coordinates are shown below:

**Licensed Coordinates:**

29° 46' 28" N Latitude  
95° 00' 55" W Longitude  
(NAD 27 Datum)

**Corrected Coordinates:**

29° 46' 29" N Latitude  
95° 00' 55" W Longitude  
(NAD 27 Datum)

**Corrected Tower Height:**

The KWWJ license lists the height of the center tower as 5 feet (3.1° electrical) taller than the outside towers. Surprisingly, the tower survey revealed that the radiation height for all three towers is essentially the same. Further, the radiation height was calculated to be slightly *taller* than the licensed heights of 99.6° and 102.1°. (see *the surveyed tower elevation data in Exhibit 13-Figure 1*). Rounding to the nearest foot and subtracting the base insulator height, the height of the tower structures (not including the top beacon and lightning rod) calculates to be 210 feet <sup>2</sup> (104.5° electrical @ 1360 kHz); all calculations for the operation of the station in this application have been made using this electrical height. Since there is a proposed change in tower height, daytime and nighttime allocations studies were performed. Using the corrected coordinates and tower height, stations with existing daytime contour overlap are not materially worsened and no new contour overlap is created. The nighttime allocations studies revealed an increased tower height results in a calculated increase in interference to a Mexican facility. Therefore a *reduction* in nighttime operating power from 1.0 kW to 0.8 kW is proposed herein and no coordination with the Mexican government is required. This power reduction also eliminates all calculated interference increases to all domestic facilities as well.

<sup>2</sup> Due to rounding in the Tower Survey, Tower 1 radiation height computes to 209 feet. For consistency in this application, all towers are assumed to be 210' in height.

## Engineering Exhibit in Support of Form 301

### Daytime Allocation Study:

Pertinent nearby stations operating on cochannel and adjacent channels are shown in **Exhibit 13-Figures 3, 4, & 5**. As there is no cognizable change in the contour locations, the licensed contours are not shown on the attached exhibits. A computer program was used to calculate the overlap, excluding over seawater, for each station where overlap is shown. This land area was compared to the contour overlap land area of the licensed facility; changes are shown in the rightmost columns of the table below. As is clearly shown, the changes in area are *de minimis* when compared to the overlap area and the larger protected coverage area.

Station		Station's Protected Contour Total Land Area (sq. km)	Interference to other station Contour Overlap Area (sq. km)			Delta as a Percentage of Total Coverage
<u>Callsign</u>	<u>Frequency</u>		<u>Licensed</u>	<u>Proposed</u>	<u>Delta</u>	
KKTX(Lic)	1360	28,192 (0.5 mV/m)	5480	5612	+132	+0.47%
KNIR(Lic)	1360	11,940 (0.5 mV/m)	4452	4508	+56	+0.47%
KCOX(Lic)	1350	20,085 (0.5 mV/m)	1898	1941	+43	+0.21%
KJCE(Lic)	1370	30,854 (0.5 mV/m)	716	756	+40	+0.13%
KRCM(Lic)	1380	3,507 (5.0 mV/m)	533	543	+11	+0.31%

Station		KWWJ's Protected Contour Total Land Area (sq. km)	Interference received by KWWJ Contour Overlap Area (sq. km)			Delta as a Percentage of Total Coverage
<u>Callsign</u>	<u>Frequency</u>		<u>Licensed</u>	<u>Proposed</u>	<u>Delta</u>	
KKTX(Lic)	1360	27,558 (0.5 mV/m)	11,524	11,596	+72	+0.26%
KNIR(Lic)	1360	27,558 (0.5 mV/m)	6800	6816	+16	+0.06%
KCOX(Lic)	1350	27,558 (0.5 mV/m)	3451	3499	+48	+0.17%
KJCE(Lic)	1370	27,558 (0.5 mV/m)	322	345	+23	+0.08%
KRCM(Lic)	1380	6,850 (5.0 mV/m)	533	543	+10	+0.15%

## Engineering Exhibit in Support of Form 301

### Nighttime Coverage and Allocations Considerations:

The calculated nighttime interference free signal level for KWWJ continues to be 13.8 mV/m. Though no longer required under Section 73.24 of the Commission's rules, **Exhibit 13-Figure 7** shows that the 13.8 mV/m NIF contour of the proposed 0.8 kW operation clearly continues to cover the entire community of Baytown.

The results of a night study showing the required protection to each pertinent station as well as the proposed radiation and the difference ("margin") are shown in **Exhibit 13-Table 1**; positive margin is where the required protection exceeds the proposed radiation. Additional information on the night study can be provided upon request. It is believed that the proposed nighttime operation complies with all domestic and international allocations rules and policies.

### Environmental Considerations:

Based on information provided by the applicant, it is believed that the provisions of Section 1.1307(a)(1-7) would not apply in this case, since no construction is proposed and no change in existing structure marking requirements is required. Therefore, it is believed that this application may also be categorically excluded from environmental processing pursuant to Section 1.1306 of the Commission's rules. The station currently complies with the limits specified in Section 1.1310 and satisfies the exposure criteria set forth in the Commission's *OET Bulletin No. 65*. The impact of human exposure to RF energy also will not change.

### Normalization of array parameters:

KWWJ's current license lists Tower 1 as the day reference tower. It also shows different data for day and night tower orientation/spacing parameters, even though only one set of towers exists; the day pattern shows Tower 1 as the 0,0 spacial reference, but the night pattern shows an offset from 0,0 for all towers. These two different sets of spacial coordinates work out to the same tower locations mathematically. This application corrects both of these issues: Tower 2 is used as the current/phase reference for both patterns, and Tower 1 is shown as the 0,0 spacial reference for both patterns. *No changes to the actual patterns or the tower locations are proposed; only different ways of showing the same parameters.*

**Engineering Exhibit in Support of Form 301****Adjustment to augmentations:**

The existing KWWJ license shows five augmentations to the nighttime directional pattern. The instant application only lists three; the two to the northeast were determined to have no practical effect on any allocations issues and so are not being proposed.

The radiation limits shown for the three remaining augmentations in the instant application, and in the Figures accompanying this exhibit, use augmentation radiation limits that have been ratioed down from the current licensed augmentation radiation limits by the square root of the ratio of the proposed to the existing nighttime power levels ( $\text{Sqrt}(0.80 \text{ kW} / 1.00 \text{ kW}) = 0.894$ ).

**Conclusions:**

It is believed that this proposal is in compliance with all Commission Rules and policies regarding tower coordinate and height correction, allocations requirements, and parameter normalization. It is the intention of the licensee to implement the changes requested herein post haste after grant of this replacement Construction Permit (repair work on the array is already underway), and an FCC Form 302-AM, Application for License, will be filed immediately upon the completion of those repairs.

Respectfully Submitted,



George Michael Patton

Michael Patton & Associates

April 6, 2023

**HANS CONSULTING COMPANY**  
Professional Engineers and Land Surveyors  
P O Box 1324  
Baytown, Texas 77522  
(281) 427-6054

**KWWJ TOWER SURVEY**  
**BAYTOWN, TEXAS**

**Tower # 1:**

LATITUDE: 29° 46' 30.1" North

LONGITUDE: 95° 00' 56.8" West

**ELEVATIONS:**

**FEET**

Ground at tower base (above mean sea level): .....	23.88
Top of tower foundation (above mean sea level): .....	27.59
Top of tower structure (above mean sea level): .....	238.32
Top of navigation light (above mean sea level): .....	240.78
Top of tower appurtenances (above mean sea level): .....	241.83

**Tower # 2:**

LATITUDE: 29° 46' 29.5" North

LONGITUDE: 95° 00' 55.8" West

**ELEVATIONS:**

**FEET**

Ground at tower base (above mean sea level): .....	22.87
Top of tower foundation (above mean sea level): .....	27.26
Top of tower structure (above mean sea level): .....	238.02
Top of navigation light (above mean sea level): .....	240.49
Top of tower appurtenances (above mean sea level): .....	241.76

**Tower # 3:**

LATITUDE: 29° 46' 28.7" North

LONGITUDE: 95° 00' 54.2" West

**ELEVATIONS:**

**FEET**

Ground at tower base (above mean sea level): .....	23.00
Top of tower foundation (above mean sea level): .....	27.26
Top of tower structure (above mean sea level): .....	238.12
Top of navigation light (above mean sea level): .....	240.58
Top of tower appurtenances (above mean sea level): .....	241.70

Horizontal position based on NAD 83 Control

Elevation are NAVD 2001 Adjustment obtained by GPS observation using GEOID 12A.

The survey complies with FAA Obstacle Accuracy Code 2C – Horizontal Position +/- 50 feet,  
Vertical elevation +/- 20 feet.



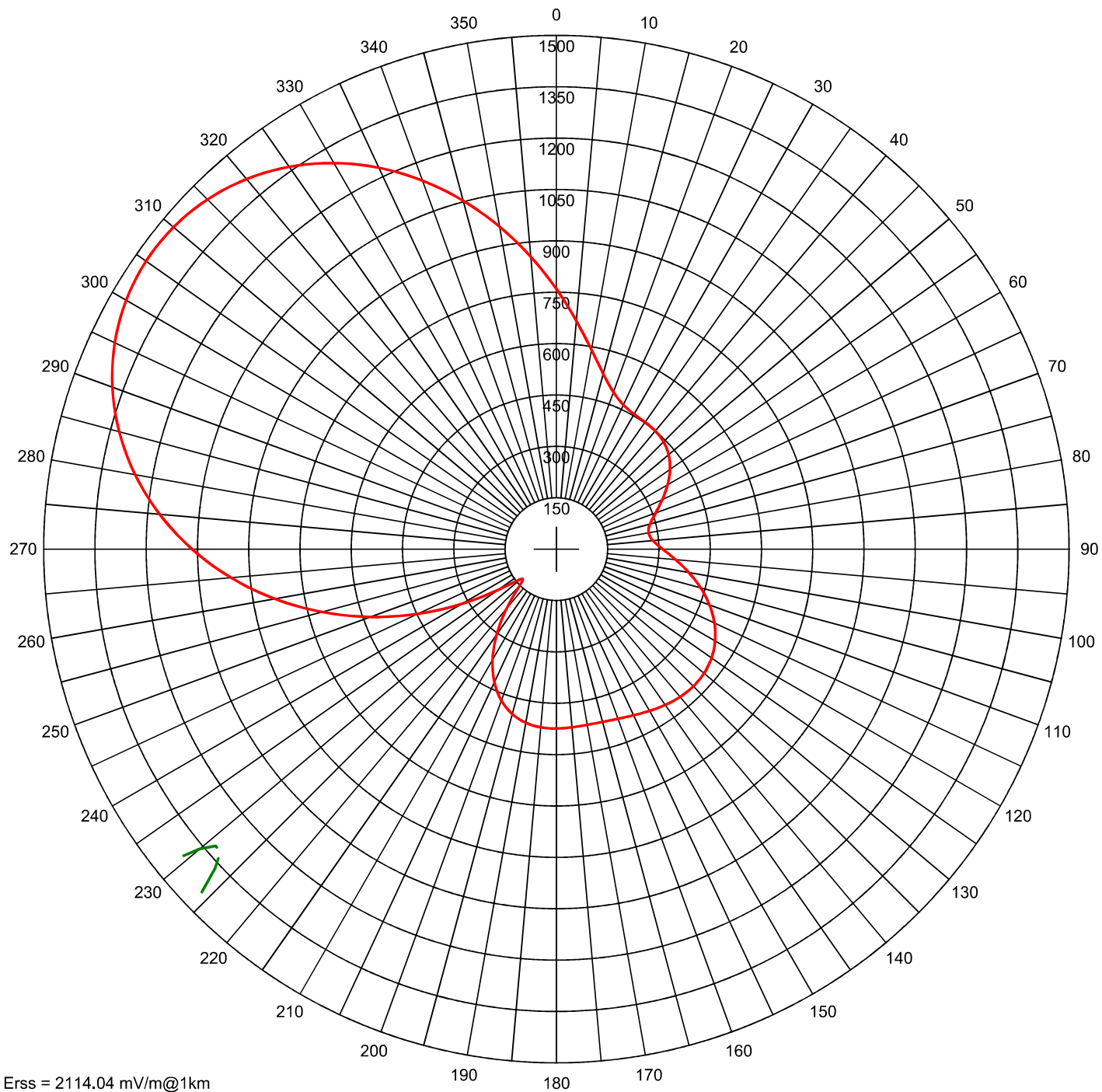
Gordon W. Hans

Registered Professional Land Surveyor #1748

December 7, 2014



# AM Directional Pattern



Erss = 2114.04 mV/m@1km  
 Theo RMS: 728.88 mV/m@1km  
 Std RMS: 767.333 mV/m@1km  
 Q: 52.851 mV/m@1km

— Pattern (mV/m @ 1km)  
 — Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Switch	TL Switch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.926	-166.5	0.0	0.0	104.5	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	54.0	131.0	104.5	0	0	0.0	0.0	0.0	0.0
3	0.324	153.5	136.0	123.0	104.5	0	0	0.0	0.0	0.0	0.0

Exhibit 13 - Figure 2 - Amended Daytime Radiation Pattern Plot

prepared April 2023 for  
 Salt of the Earth Broadcasting, Inc  
 KWWJ, Baytown, TX  
 1360 kHz 5.0/0.8 kW DA-2 U

Michael Patton & Associates  
 Baton Rouge, Louisiana



**EXHIBIT 13 - FIGURE 3**  
**DAYTIME ALLOCATIONS STUDY**  
**CO-CHANNEL**

prepared August 2016 for

**Salt of the Earth Broadcasting, Inc.**  
**KWWJ(AM) Baytown, Texas**  
**1360 kHz 5.0/0.8 kW DA-2 U**

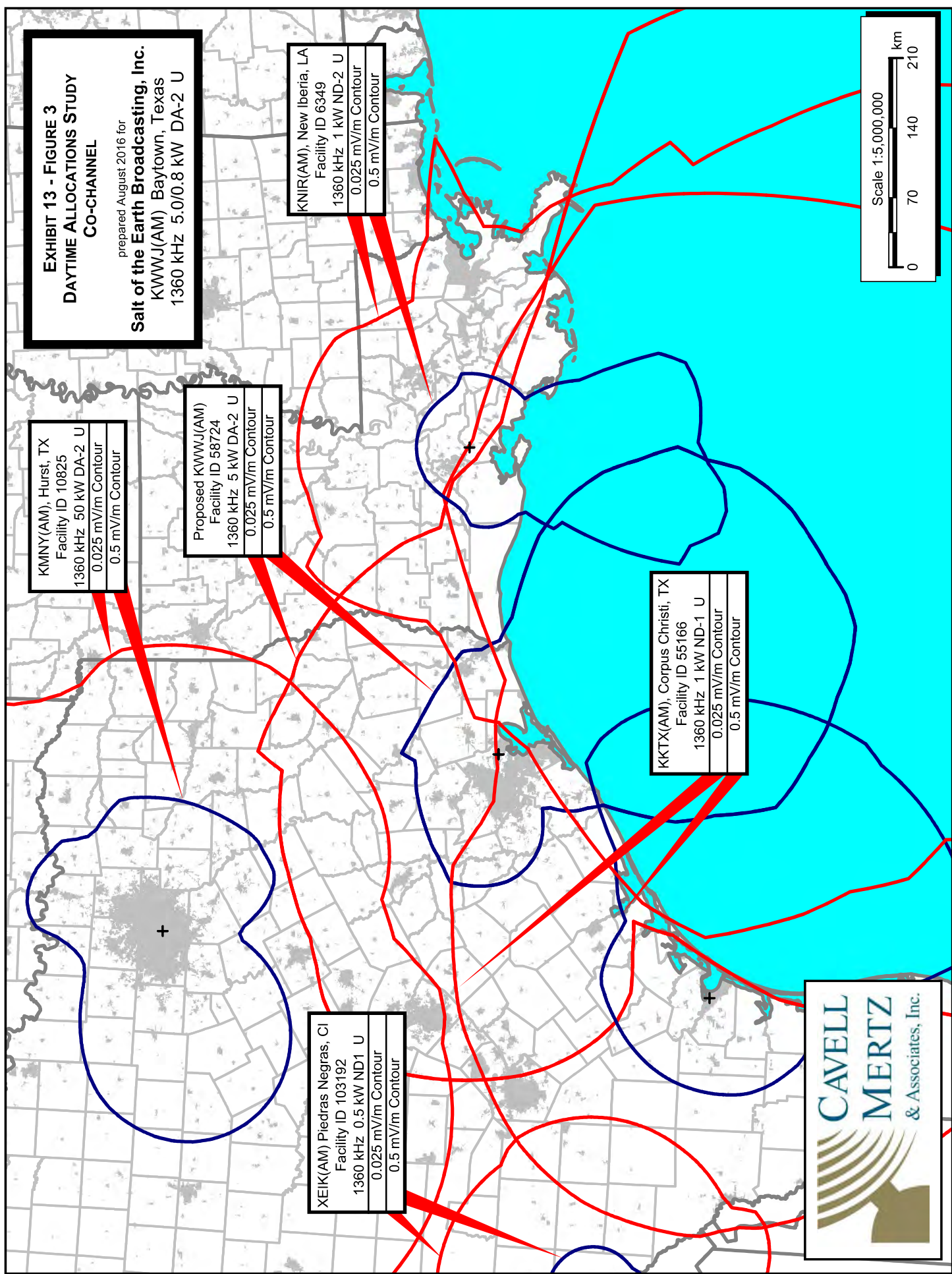
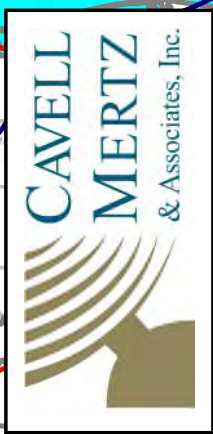
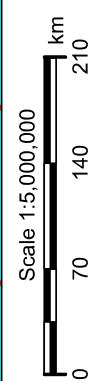
**KMNY(AM), Hurst, TX**  
**Facility ID 10825**  
**1360 kHz 50 kW DA-2 U**  
**0.025 mV/m Contour**  
**0.5 mV/m Contour**

**Proposed KWWJ(AM)**  
**Facility ID 58724**  
**1360 kHz 5 kW DA-2 U**  
**0.025 mV/m Contour**  
**0.5 mV/m Contour**

**KNIR(AM), New Iberia, LA**  
**Facility ID 6349**  
**1360 kHz 1 kW ND-2 U**  
**0.025 mV/m Contour**  
**0.5 mV/m Contour**

**XEIK(AM) Piedras Negras, CI**  
**Facility ID 103192**  
**1360 kHz 0.5 kW ND1 U**  
**0.025 mV/m Contour**  
**0.5 mV/m Contour**

**KKTXX(AM), Corpus Christi, TX**  
**Facility ID 55166**  
**1360 kHz 1 kW ND-1 U**  
**0.025 mV/m Contour**  
**0.5 mV/m Contour**



**EXHIBIT 13 - FIGURE 4**  
**DAYTIME ALLOCATIONS STUDY**  
**1ST ADJACENT**

prepared August 2016 for

**Salt of the Earth Broadcasting, Inc.**  
**KWWJ(AM) Baytown, Texas**  
**1360 kHz 5.0/0.8 kW DA-2 U**

KCOR(AM), San Antonio, TX  
Facility ID 67069  
1350 kHz 5 kW DA-N U  
0.25 mV/m Contour  
0.5 mV/m Contour

KJCE(AM), Jasper, TX  
Facility ID 1243  
1350 kHz 5 kW DA-2 U  
0.25 mV/m Contour  
0.5 mV/m Contour

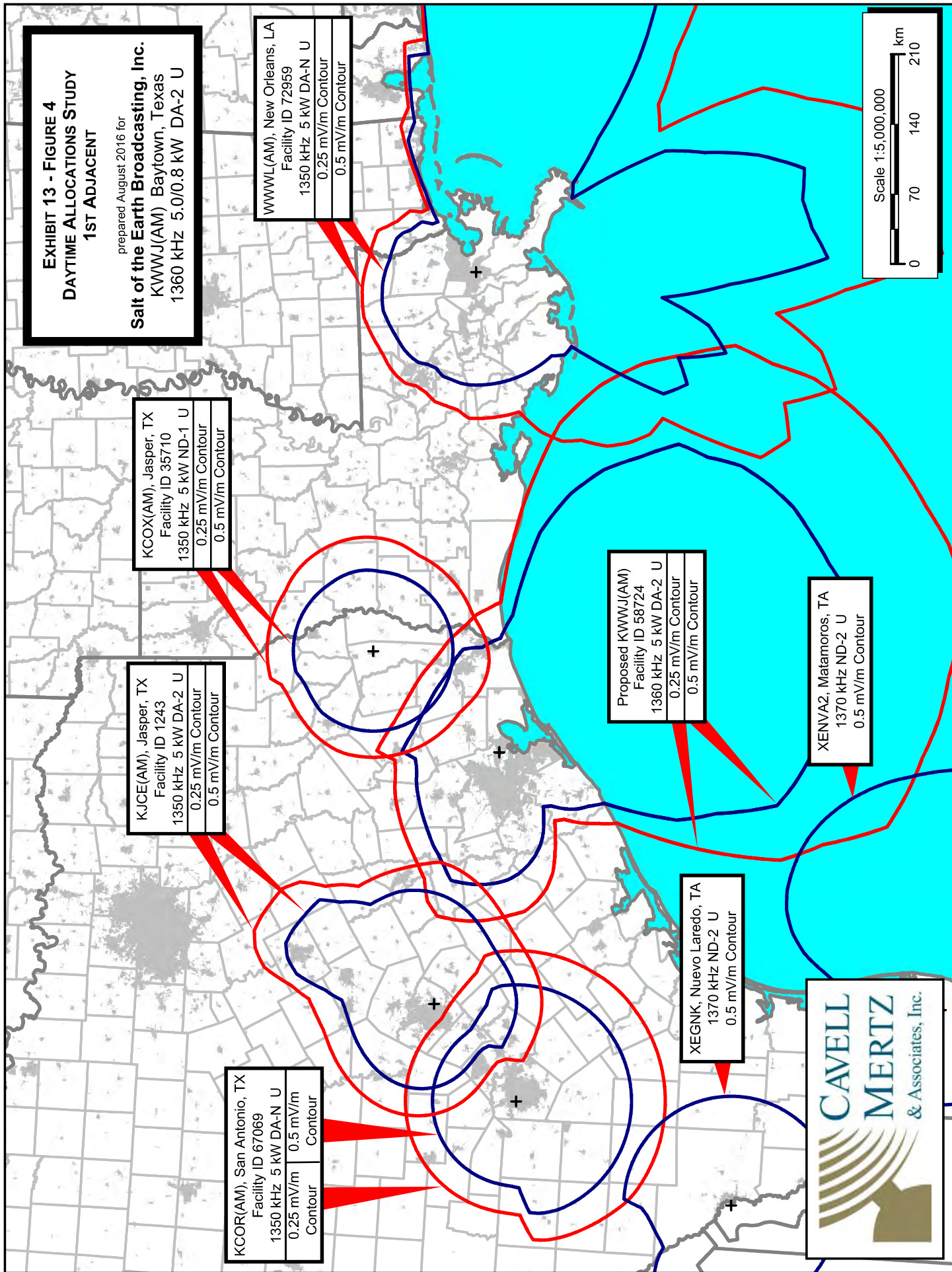
KCOX(AM), Jasper, TX  
Facility ID 35710  
1350 kHz 5 kW ND-1 U  
0.25 mV/m Contour  
0.5 mV/m Contour

WWWL(AM), New Orleans, LA  
Facility ID 72959  
1350 kHz 5 kW DA-N U  
0.25 mV/m Contour  
0.5 mV/m Contour

Proposed KWWJ(AM)  
Facility ID 58724  
1360 kHz 5 kW DA-2 U  
0.25 mV/m Contour  
0.5 mV/m Contour

XEGNK, Nuevo Laredo, TA  
1370 kHz ND-2 U  
0.5 mV/m Contour

XENVA2, Matamoros, TA  
1370 kHz ND-2 U  
0.5 mV/m Contour





**EXHIBIT 13 - FIGURE 5**  
**DAYTIME ALLOCATIONS STUDY**  
**2ND ADJACENT**

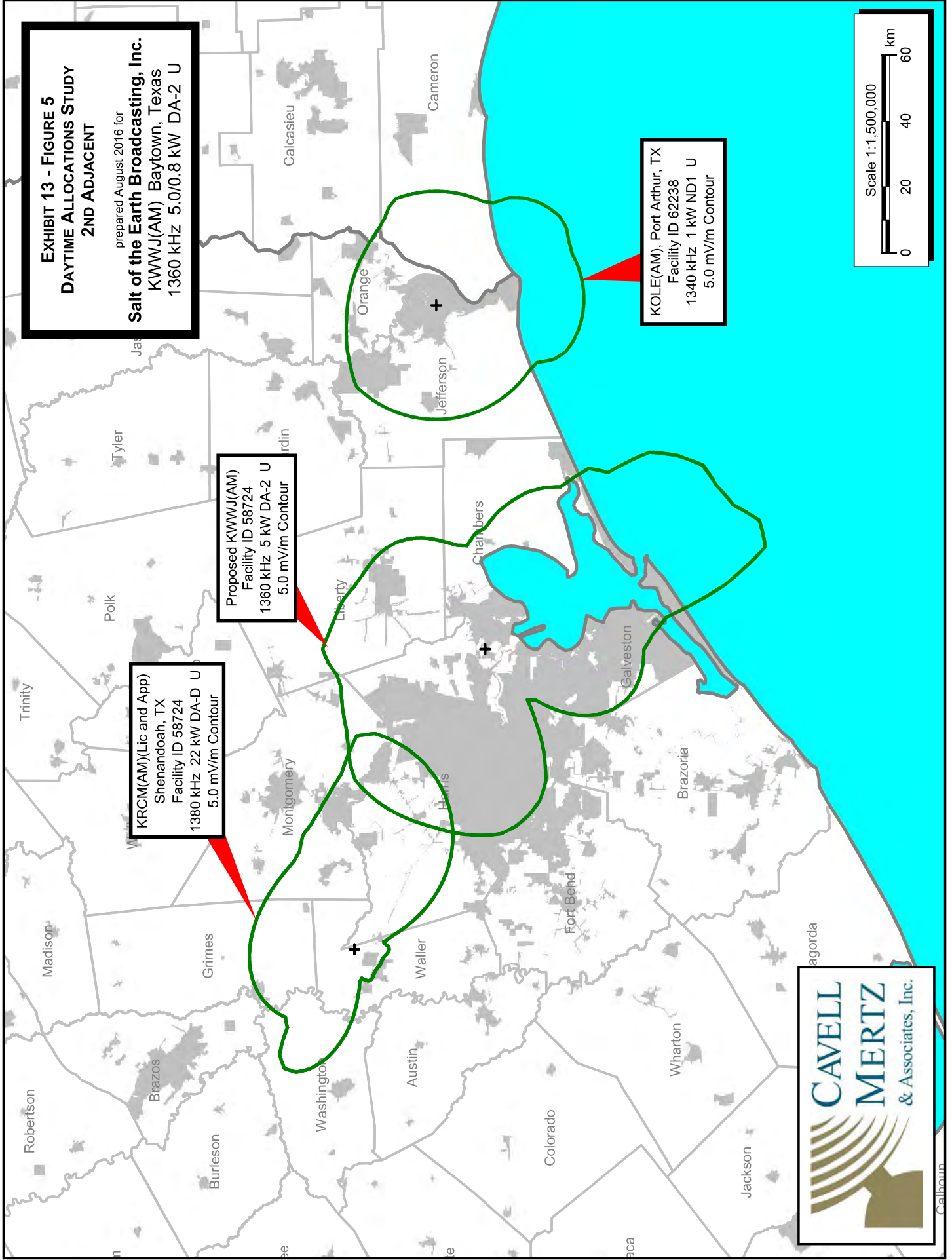
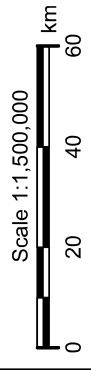
prepared August 2016 for

**Salt of the Earth Broadcasting, Inc.**  
**KWWJ(AM) Baytown, Texas**  
**1360 kHz 5.0/0.8 kW DA-2 U**

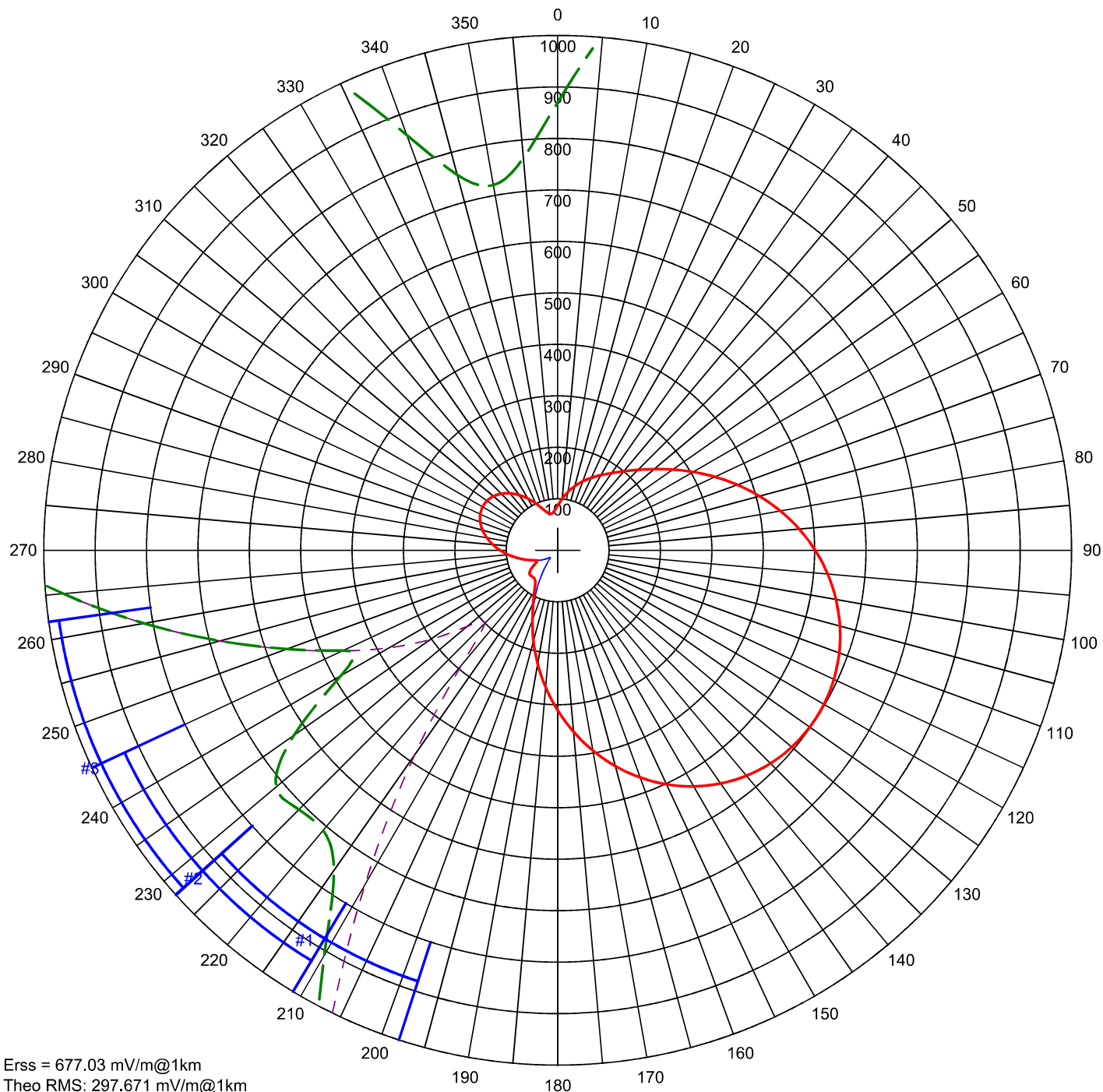
**Proposed KWWJ(AM)**  
**Facility ID 58724**  
**1360 kHz 5 kW DA-2 U**  
**5.0 mV/m Contour**

**KRCM(AM)(Lic and App)**  
**Shenandoah, TX**  
**Facility ID 58724**  
**1380 kHz 22 kW DA-D U**  
**5.0 mV/m Contour**

**KOLE(AM), Port Arthur, TX**  
**Facility ID 62238**  
**1340 kHz 1 kW ND1 U**  
**5.0 mV/m Contour**



# AM Directional Pattern



Erss = 677.03 mV/m@1km  
 Theo RMS: 297.671 mV/m@1km  
 Std RMS: 313.059 mV/m@1km  
 Aug RMS: 313.609 mV/m@1km  
 Q: 16.926 mV/m@1km

Modified Standard Horizontal Plane Pattern

— Aug Pattern (mV/m@1km)  
 — Std Pattern (mV/m@1km)  
 - - Aug Pattern X10  
 - - Std Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch
1	0.500	166.0	0.0	0.0	104.5	0
2	1.000	0.0	54.0	131.0	104.5	0
3	0.500	-146.0	136.0	123.0	104.5	0

#	Azimuth (deg)	Radiation (mV/m@1km)	Span (deg)
1	213.00	79.50	30.0
2	228.00	72.00	34.0
3	245.00	46.10	34.0

Exhibit 13 - Figure 6 - Amended Nighttime Radiation Pattern Plot

prepared April 2023 for  
 Salt of the Earth Broadcasting, Inc  
 KWWJ, Baytown, TX  
 1360 kHz 5.0/0.8 kW DA-2 U

Michael Patton & Associates  
 Baton Rouge, Louisiana

**EXHIBIT 13 - FIGURE 7 - AMENDED  
NIGHTTIME INTERFERENCE-FREE  
COVERAGE**

prepared August 2016 for

**Salt of the Earth Broadcasting, Inc.**  
KWWJ(AM) Baytown, Texas  
1360 kHz 5.0/0.8 kW DA-2 U

Chambers

13.8 mV/m NIF  
Coverage Contour

Baytown, Texas

Scale 1:375,000  
0 5 10 15 km



Exhibit 13 - Table I - Amended  
**NIGHTTIME ALLOCATIONS STUDY**

prepared for

**Salt of the Earth Broadcasting, Inc.**

KWWJ(AM) Baytown, Texas

Facility ID 58724

1360 kHz 5 kW/0.8 kW DA-2 U

Night Allocation Protection Report

Call: KWWJ.800w  
Freq: 1360 kHz  
BAYTOWN, TX, US  
Hours: N  
Lat: 29-46-28.70 N  
Lng: 095-00-55.10 W  
Power: 0.8 kW  
Theo RMS: 297.62 mV/m @ 1km @ 0.8 kW  
# of Augmentations: 3

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Switch	TL Switch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	15.9	278.0	104.5	0	0	0.0	0.0	0.0	0.0
2	0.500	166.0	68.0	303.0	104.5	0	0	0.0	0.0	0.0	0.0
3	0.500	-146.0	68.0	123.0	104.5	0	0	0.0	0.0	0.0	0.0

Augmentations:

#	Azimuth (deg)	Radiation (mV/m@1km)	Span (deg)
1	213.00	79.20	30.0
2	228.00	72.00	34.0
3	245.00	46.10	34.0

Call Letters	Ct	St	City	Azi (deg)	Ang Low (deg)	Ang High (deg)	SWFF (100uV/m)	Req Prot (mV/m)	Permis (mV/m)	Cur Rad (mV/m)	Margin (mV/m)
KMNY.L	US	TX	HURST	331.45	19.81	31.20	166.84	2.836	84.99	83.39	1.60
KKTX.L	US	TX	CORPUS CHRISTI	227.95	23.22	35.67	200.17	2.837	70.87	63.15	7.71
WMOB.L	US	AL	MOBILE	79.73	10.39	17.79	81.60	7.040	431.38	419.68	11.70
WHNR.L	US	FL	CYPRESS GARDENS	95.29	3.32	7.38	31.12	3.373	541.94	527.42	14.52
XEUL.P/A	MX	YC	PROGRESO	148.97	7.54	7.54	55.71	5.995	538.05	523.50	14.55
WKAT.C	US	FL	NORTH MIAMI	103.14	1.98	5.50	25.20	2.913	577.95	562.48	15.47
WKAT.L	US	FL	NORTH MIAMI	103.47	1.94	5.44	25.05	2.902	579.28	563.78	15.50

**Cavell Mertz & Associates, Inc.**

# Exhibit 13 - Table I - Amended

(Page 2 of 2)

## NIGHTTIME ALLOCATIONS STUDY

KACT.L	US TX ANDREWS	293.63	8.81	15.44	68.43	3.496	255.44	155.89	99.55
XEIK.O/A	MX CI PIEDRAS NEGRAS	258.93	18.05	18.05	117.32	4.128	175.95	58.56	117.39
WWWL.L	US LA NEW ORLEANS	86.78	15.59	25.35	127.78	1.420	555.78	437.67	118.11
KSCJ.L	US IA SIOUX CITY	355.61	2.55	6.29	23.89	1.074	224.69	72.52	152.18
XEDI.P/A	MX CH CHIHUAHUA	265.86	7.64	7.64	56.39	3.450	305.87	92.42	213.45
XEDI.P/O	MX CH CHIHUAHUA	265.86	7.64	7.64	56.39	3.450	305.87	92.42	213.45
XEDI.P/O	MX CH CHIHUAHUA	265.86	7.64	7.64	56.39	3.450	305.87	92.42	213.45
XEDI.O/A	MX CH CHIHUAHUA	266.02	7.62	7.62	56.27	3.463	307.74	92.93	214.81
XEVAL.O/O	MX SL CD.VALLLES	205.70	9.20	9.20	68.66	4.772	347.52	108.45	239.07
KPHN.L	US KS EL DORADO	349.97	6.95	12.68	52.63	3.247	308.43	67.23	241.20
WTAQ.L	US WI GREEN BAY	18.64	0.81	3.89	15.83	1.211	382.56	131.81	250.75
KDJW.L	US TX AMARILLO	315.55	7.33	13.24	56.29	4.540	403.23	148.97	254.26
XEFBF.O/O	MX VC MARTINEZ DE LA	191.17	7.41	7.41	54.72	5.225	477.41	211.98	265.43
XEFBF.P/A	MX VC MARTINEZ DE LA	191.17	7.41	7.41	54.72	5.225	477.41	211.98	265.43
WSAI.L	US OH CINCINNATI	39.49	2.57	6.32	24.64	2.345	475.92	191.90	284.02
XEDQ.O/A	MX VC SAN ANDRES TUXT	180.92	5.78	5.78	41.01	4.806	585.94	300.60	285.35
KLSD.L	US CA SAN DIEGO	284.57	0.00	1.65	13.46	1.182	438.88	149.66	289.22