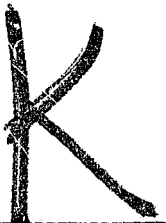


11

DEPARTMENT OF ENVIRONMENTAL SERVICES
Land Use Planning Division
1600 SE 190th Avenue
Portland, Oregon 97233-5910
Planning: (503) 988-3043; Right-of-Way: (503) 988-3582; Fax: (503) 988-3389

BUILDING PERMIT REVIEW

The attached site plan and building plans have been reviewed by Multnomah County Land Use Planning and Right-of-Way Permits offices. Where initialed below, those lines may be "signed off" by City Building Permit personnel on the corresponding lines of the building permit. Please add to the building permit in the appropriate message areas all comments and conditions that must be seen by *plans examiners and building inspectors.*

Building Permit Description: Co-location of signal repeater equipment
Tax Account Number: R991060850
Tax Roll Description: Sec 6 1S1E; TL 500
Property Address: 5510 SW Barnes Rd
Zoning: R-20/CS **Related Case Number(s):** T2-01-003

INITIALS	DATE	
KR	5/30/01	**Land Review, Planning and Zoning, Design Review** Notes: Complies with condition of Approval #4 requiring a report demonstrating compliance with MCC .7035(F)(1)
_____	_____	**Right-of-Way** Notes:
_____	_____	**Final site inspection by Planning or Right-of-Way is required prior to structure being occupied.**

COMMENTS:

City of Portland
SEP 11 2001
Permit Number

Copies for Applicant:
- this form
- copy of tax account information printout
- copy of assessor's map (property highlighted)
- stamped site plans (4 for Portland,2 for Gresham)
- sets of building plans (4 for Portland,2 for Gresham)
- copy of "Decision" conditions of approval if there is a related case

• Copies to County Files:
- copy of this form
- tax information printout
- copy of assessor's map (property highlighted)
- stamped site plan
- 1 set of building plans that show relevant zoning standards, ie. building height, floor plan, roof overhang, spark arrestor, fire retardant roof, etc.

10/00

01-154577-CO

Date: Application #:

City of Portland, Bureau of Buildings, 503-823-7310, TDD: 503-823-6868

Multi-Family/Commercial Building Permit Application

Please provide the following information:

Project Address: 5511a SW Barnes Rd. | Project Valuation: 22,000

~~Legal Description:~~ | ~~Tax Account #:~~

Applicant's Name: X AC CONSTRUCTION SERVICE Phone #: 503-551-0221

Company Name: 4740 Ridge Drive NE Salem OR Fax #: 503-390-0115

Address:

Contractor's Name: ~~TO BE~~ To Bid CCB # Phone #:

Address: Fax #:

Which of the following best describes the proposed work?

☐ Addition
How many square feet?_____

☐ Demolish structure

☐ Fire Damage Repair

☐ Move a structure
From what address?
_____
_____

☐ Alteration
If change of use or occupancy:
From use/occupancy_____
To use/occupancy_____
Seismic Upgrade: Yes____ No____

☒ New Construction
How many square feet?_____
How many stories?_____
Number of structures_____

***Briefly describe the proposed work** (include location):*_____

***Which of the following best describes the use of the structure(s)?** Check all that are applicable.*

☐ Apartments/Condos
☐ Assembly
☐ Assisted Care Facility
☐ Business
☐ Education
☐ Factory/Industrial
☐ Hazardous
☐ Hotel
☐ Institutional
☐ Mercantile
☐ Row House (*3 or more*)
☐ Storage
☑ Miscellaneous (*deck, driveway, fence, retaining wall, tank, tower, site work*)

Existing Structure:
What is the square footage of the existing structure? 960' House
How many stories is the existing structure?_____

Plumbing Fixtures:
How many new plumbing fixtures?
_____

For Dwelling Units:
How many dwelling units are existing?_____
How many dwelling units will be demolished?_____
How many dwelling units will be added?_____

Floodplain:
Is the property in the floodplain?
Yes ____ No ____

City of Portland
SEP 11 2001
PERMIT ISSUED

Have any appeals been requested or approved for this project?
Yes ____ No ____ *If yes, please attach a copy.*

Have any Land Use Reviews been requested or approved for this project?
Yes ____ No ____ *If yes, please attach a copy.*

Commercial, Industrial, and Multi-Family Submittal Request
Commercial Submittal Requirements

Please indicate below the items being submitted for review. ***Please refer to the "Summary of Submittal Requirements - Commercial, Industrial and Multi-Family Dwellings" handout for a comprehensive list of requirements.*** *Failure to provide any of the required information at time of submittal will be cause for rejection of your application.* Applications will not be processed or routed for review until all plan review/processing fees have been paid.

Yes	N/A		Office Use Only ◊ Office Use Only ◊ Office Use Only	Accepted
		Final Plat Approval: Projects involving a land division or new subdivision are required to have final plat		
		Appeals: Have appeals been granted for this project? YES ☐ NO ☐ If Yes, copies must be attached		
		Phased Permits: Are you requesting phased permitting at time of permit submittal? YES ☐ NO ☐		
		Main Permit: Four (4) complete sets of construction documents (design drawings for phased permits) that include:		
		• **Site Plan:** A 100% complete site plan showing all related improvements		
		• **Foundation Plans:** A foundation plan including all dimensions, construction details and references		
		• **Elevations:** Building elevations		
		• **Floor Plans:** Floor plans (for phased permits see handout)		
		• **Sections:** Building sections (for phased permits see handout)		
		• **Mechanical, Electrical & Plumbing drawings:** (see handout)		
		• **Specifications:** Two (2) sets of complete construction specifications (for phased permits see handout)		
		• **Structural Calculations:** one (1) set		
		• **Soils Report:** Two (2) sets of soils reports		

If you are also requesting a phased permit at the time of permit submittal, you must also provide

Yes	N/A		Office Use Only ◊ Office Use Only	Accepted
		Partial Permit: Four (4) complete sets of construction documents for the scope of the partial permit (usually "Grading/Shoring Only", Structural Only", or "Foundation Only" permits) that include:		
		• **Site Plan:** A 100% complete site plan showing all related improvements		
		• **Construction Plans:** 100% construction plans showing all work to be done under partial permit		
		• **Mechanical, Electrical, Plumbing Drawings:** (see handout)		
		• **Specifications:** Two (2) sets of construction specifications for work to be covered under the partial permit		
		• **Structural Calculations:** One set of complete calculations for the work covered under the partial permit		
		• **Soils Reports:** Two (2) sets of soils reports		

For Official Use Only

Applicant's Signature _____ Date _____

The above referenced submittal has been reviewed for adequacy and is ☐ accepted for submission or ☐ rejected. If it is rejected, the reasons indicated above need to be addressed before resubmittal. A copy of this review has been given to the applicant and its contents reviewed with them. ☐

Signature of Reviewer _____ Date _____

Reviewer Comments _____

LeBLANC Ltd.
Communications Systems Division
461 Cornwall Rd., PO Box 880, Oakville, ON, Canada L6J 5C5
Tel:(905) 844-1242 Fax:(905) 844-8837

March 11, 2001

LCC International Inc.
675 Strander Blvd.
Tukwila, WA, USA
98188

Attention: Paul Long

Dear Mr. Long,

Re: Structural Analysis of Existing 985' LRM3000
Tower at Portland, Oregon
LeBLANC File: 01-77-006-01

We have completed the structural analysis of the existing tower at Portland, Oregon, and are pleased to submit our report for your attention.

We trust the analysis and recommendations presented in the report will meet your requirements. However, please do not hesitate to contact us if you have any questions, or require any further information regarding this study.

Yours very truly,

LeBLANC Ltd.
Communications Systems Division

E. Veresiu, P. Eng.
Manger, Engineering

01-154-577 CO

LeBLANC File: 01-77-006-01

ANALYSIS OF

985' LRM3000

AT Portland, Oregon

PREPARED FOR:

LCC International Inc.

PREPARED BY:

LeBLANC LTD.
Communications Systems Division
461 Cornwall Road, P.O. Box 880
Oakville, ON
Canada L6J 5C5

1.0 Terms of Reference:

The following documents and drawings were examined:

Tower Profile:	LeBlanc Drawing # 980005701-E02-01
Tower Foundations:	LeBlanc Drawing # 980005701-F01-01 and 02
	LeBlanc Drawing # 980005701-F02-01 and 02
Antenna Inventory:	LeBlanc Drawing # 980005701-E02-01
Soil Report:	Fujitani Hilts and Associates #F-2992.01 from August 25, 1998

A tower inspection was not performed in conjunction with this analysis.

2.0 Parameters:

Standard:	EIA-222-F
Basic Wind Speed:	100.00 (mph)
Radial Ice Thickness:	1.00 (in) (at 50mph basic wind speed)
Operational Wind Speed:	50.00 (mph)

3.0 Assumptions:

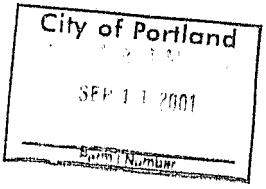
Tower is analyzed for the addition of one antenna as outlined in the tower profile drawing.

3.1 Tower Loading:

Appendix A shows the tower profile, along with the antennas, transmission lines and ancillary loading considered in this analysis. Installation of the transmission lines as outlined in drawing # 980005701-E02-01 Typical Plan View is a condition for the accuracy of the analysis results.

4.0 Analysis Results:

The existing structure was analysed using the comprehensive computer program "LeBLANC Tower", in conjunction with "Weisman GUYMAST". Complete computer output is in file at our Oakville, Ontario office. Typically, forces in members exceeding their rated capacities by less than 5% are tolerated.



Graphical and tabular results are presented in Appendix B. A summary is presented below:

- Tower legs: Loaded to maximum 100.1% of the rated member capacity (642 ft elevation). This is considered tolerable.
- Tower bracing: Loaded to maximum 104.5% of member capacity (206 ft elevation). This is considered tolerable.
- Tower guys: Acceptable.
- Foundation base and anchors: Acceptable.

5.0 CONCLUSIONS & RECOMMENDATIONS

Install the new antenna at 390' elevation and the EW20 transmission line on the TX ladder support from behind the climbing ladder. With the proposed addition of the E20 tx-line, there may be not enough physical space to install all the transmission lines on this ladder support for the future antennas considered in the design of the tower. Therefore, we recommend reducing the number of antennas from 20 future HP8 to 19 future HP8 (item # 18 in the antenna list).

If these recommendations are followed, the tower will remain in compliance with the American Standard EIA-222-F.

LeBLANC Ltd.
Communications Systems Division

REGISTERED PROFESSIONAL ENGINEER 60455 OREGON

E. Veresiu, P. Eng.
Manger, Engineering

City of Portland EX

APPENDIX A

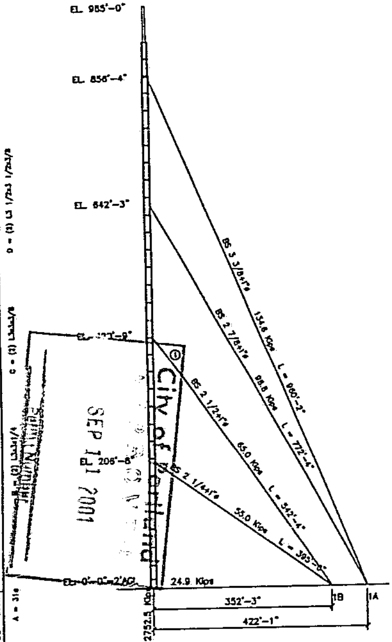
Tower Profile

Antenna Loading List

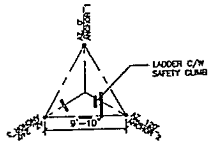
DESIGN SPECIFICATION: EIA-222-F
BASIC WIND SPEED: 100.0 mph
RADIAL ICE: 1.0 in

SECTION NO.	1–6	7–9	10–15	16–17	18–23	24	25–27	28–29	30–31	32
LEGS GRADE = 350W	SR 7 1/4	SR 7 1/2	SR 7	SR 7	SR 8 1/2	SR 8 1/2	SR 8	SR 5 1/2	SR 5 1/2	SR 5 1/2
DIAGONALS GRADE = 300W	(2) L3x3x1/4	(2) L3x3x3/8	(2) L3x3x1/4	C	(2) L3x3x1/4	D	C	B	(2) L3x3x3/8	B
HORIZONTALS GRADE = 300W	(2) L2 1/2x2 1/2x1/4	(2) L2 1/2x2 1/2x1/4	(2) L2 1/2x2 1/2x1/4	(2) L2 1/2x2 1/2x1/4	(2) L2 1/2x2 1/2x1/4	B	(2) L2 1/2x2 1/2x1/4	(2) L2 1/2x2 1/2x1/4	(2) L2 1/2x2 1/2x1/4	(2) L2 1/2x2 1/2x1/4

A = 31e B = (2) L3x3x1/4 C = (2) L3x3x3/8 D = (2) L3 1/2x3 1/2x3/8

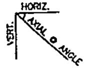


ANTENNA LOADING CHART								
POS.	DESCRIPTION	QTY	ELEVATION	Tx LINE	QTY	AZIMUTH	COMMENTS	STATUS
1	TIL-TEK TA23	1	390'-0"	EW20	1	0"	PRPOSED	



TYPICAL SECTION

ANCHOR	AZIMUTH	RADIUS	ELEV.	VERT. (Kips)	HORIZ. (Kips)	AXIAL (Kips)	ANGLE
1B	0.0°	352'-2"	-20'-10"	378.3	416.0	562.3	42.3°
2B	120.0°	337'-0"	-6'-10"	378.2	415.2	581.6	42.3°
3B	240.0°	324'-10"	4'-4"	380.3	418.3	565.4	42.3°
1A	0.0°	422'-1"	-21'-0"	773.2	447.0	893.1	60.0°
2A	120.0°	422'-0"	-16'-0"	771.1	448.2	891.9	59.8°
3A	240.0°	410'-0"	4'-7"	775.4	449.1	896.0	59.9°



ANCHOR REACTIONS

FILE NO. 01-77-006-01

REVISIONS				
REV.	DESCRIPTION	DWN	CHK	APP

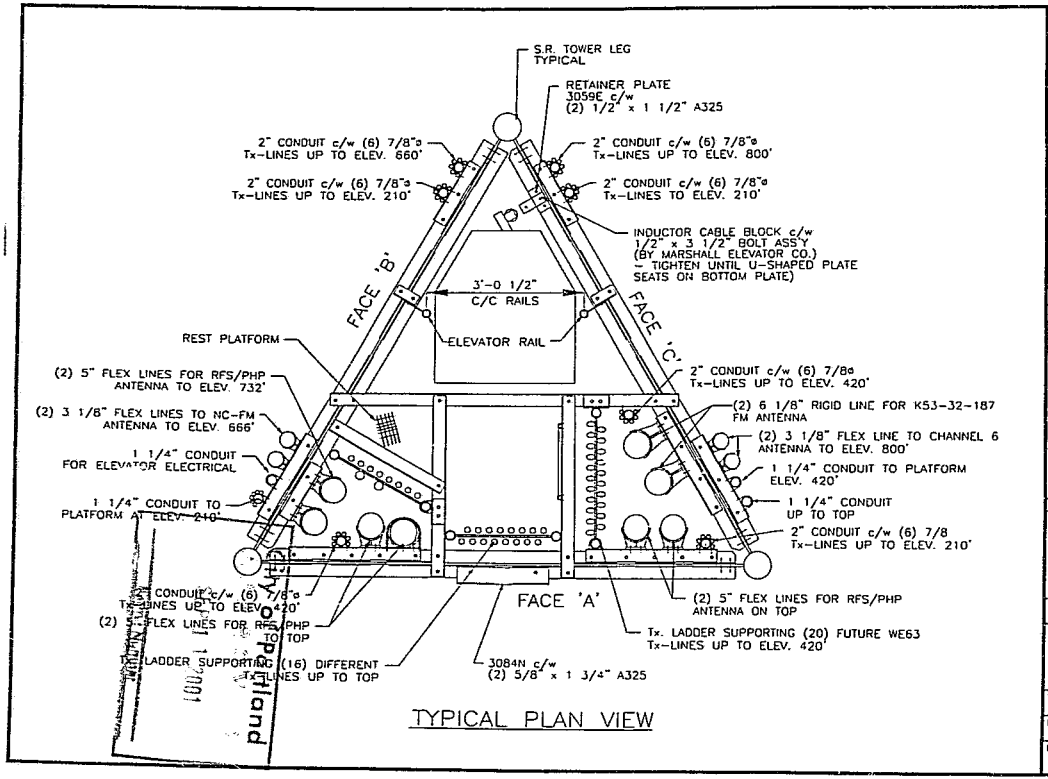
DWG REFERENCE

LeBLANC

OAKVILLE, ON, CANADA PHONE: (905) 844-1242 FAX: (905) 844-8837
St. CHARLES, MO, USA PHONE: (636) 922-3200 FAX: (636) 922-3230

KOIN
985' LRM3000
Portland, Oregon

DWN:	CHK'D:	DATE: 01/03/11
ENG'R: E. Veressiu	ENG'R APP'D:	
DRAWING NO:		REV:



TYPICAL PLAN VIEW

FILE NO. 98-00-057-01			
REVISIONS			
REV	DESCRIPTION	DWN	CHK	APP'D
0	Issued for Permit	JCC	JCC	EV
2	Drawing number copied with 980003701 98/12/11	JCC		

DWG REFERENCE

LeBLANC

OAKVILLE, ON, CANADA PHONE (905) 844-1242 FAX (905) 844-8837
RICHARDSON, TX, USA PHONE (972) 664-7450 FAX (972) 664-7479

LBI (KOIN -TV)
TYPICAL PLAN VIEW

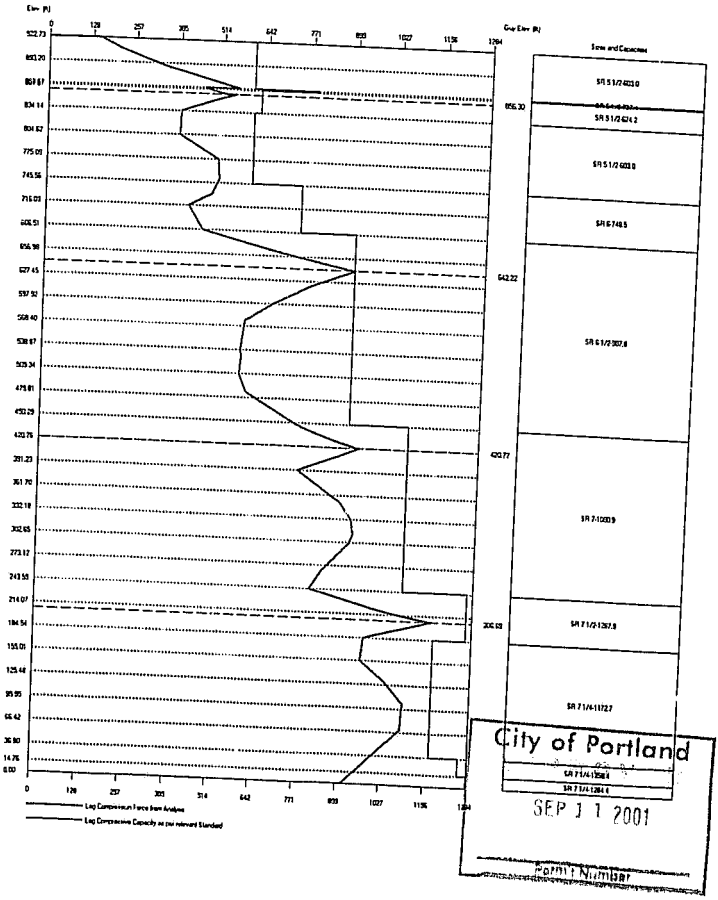
PORTLAND, OREGON

DWN: JCC	CHK'D: JCC	DATE: 98/10/31
ENG'D: EV	ENG'R APP'D: RKA	
DRAWING NO: 30B1119_E02_01		REV: 1

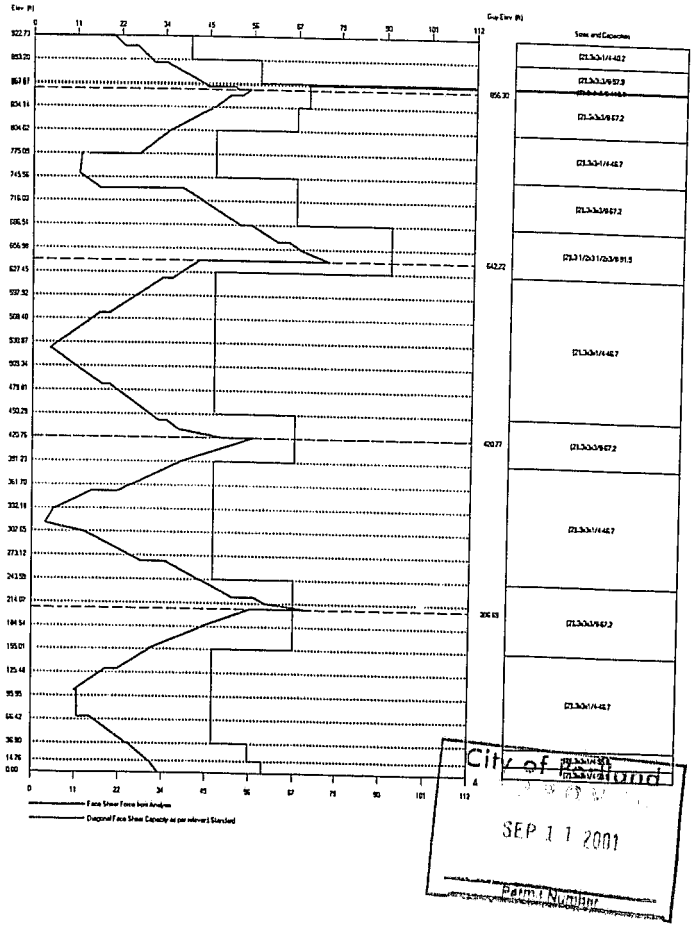
Antenna Loading Chart								
Pos.	Description	Qty	Elevation	Tx Line	Qty	Azimuth	Comments	Status
1	GP6	1	54	7/8	1			M
2	HP6	1	75	EW52	1			M
3	HP8 & IG	1	85	EW52	1			M
4	GP4	1	120	7/8	1			M
5	HP8 & IG	1	125	EW52	1			M
6	HP4 & IG	2	125	7/8	2			M
7	P4	3	135	7/8	3			M
8	GP6	1	136	7/8	1			M
9	P6	1	150	EW35	1			M
10	SCALA P	1	160	1/2	1			M
11	HP8 & IG	1	165	EW52	1			M
12	GP4	1	170	1/2	1			M
13	P6	1	170	EW65	1			M
14	SCALA P	1	174	1/2	1			M
15	P8	1	187	EW63	1			M
16	GP4	2	190	7/8	2			M
17	PD-10085L	5	197	7/8	5			M
18	HP6	19	207-420	EW63	19			M
19	HP6	1	208	EW63	1			F
20	YAGI	1	213	7/8	1			M
21	HP6 & IG	1	216	7/8	1			M
22	GP4	1	226	7/8	1			M
23	Corner Reflector	1	233	7/8	1			M
24	HP4 & IG	1	243	EW90	1			M
25	HP4 & IG	1	250	EW180	1			M
26	HP4	1	250	EW180	1			M
27	HP8 & IG	1	283	EW63	1			M
28	15'Dipole	1	285	7/8	1			M
29	HP6 & IG	1	290	EW63	1			M
30	SCALA P	1	300	7/8	1			M
31	P6	1	308	EW127	1			M
32	HP6	1	346	EW65	1			M
33	HP4 & IG	1	348	EW63	1			M
34	HP6	1	350	EW65	1			M
35	SCALA P	1	385	7/8	1			M
36	SRI310-C8	2	395	7/8	1			M
37	HP4 & IG	1	400	EW65	1			M
38	SRL310-C8	2	422	7/8	1			M
39	SRL210-C2	2	443	7/8	1			M
40	SRL410-C9	2	445	7/8	1			M
41	GP6	2	470	7/8	2			M
42	P6	1	490	EW63	1			M
43	HP8	2	500	EW63	2			M
44	HP4 & IG	1	510	EW180	1		283'-510'	M
45	GP4	1	652	7/8	1			M

46	K52-34-863 NCFM 6B,3P	1	666	3 1/8	2			I
47	RFS PHP	1	732	5" FL	2			I
48	HP8	6	775	EW63	6			I
49	HP6	1	790	WE65	1			M
50	MRC Proscan	1	860	7/8	1		+5/8 Cable	M
51	Nurad Quad	1	860	1 5/8	1		+5/8 Cable	I
52	k.52-34-867 3b Ch6,2bCh2	1	830	3 1/8	2			I
53	K53-32-187 6B, 3P	1	890	6 1/8	2			I
54	RFS PHP	1	TOP	5"FL	4			I
55	6'Platform	1	214					
56	6'Platform	1	428					
57	TIL-TEK TA2350	1	390	EW20	1			P
M-Moved, P-Proposed, I-Initial, F-Future								

MAXIMUM LEG COMPRESSION (kips)



MAXIMUM FACE SHEAR - DIAGONAL CAPACITY (Kips)



APPENDIX B
Results of Analysis

Guy Safety Factors

Guy Elevation (ft)	
856.30	2.500
642.22	2.480
420.77	2.390
206.69	2.290

Maximum Beam Rotation (degrees) for serviceability conditions:

Elevation (ft)	
954.72	0.88
952.99	0.88
909.97	0.88
889.11	0.88
869.98	0.87
859.97	0.87
848.98	0.79
826.77	0.86
775.00	1.09
731.99	1.25
685.70	1.06
666.01	0.99
646.33	0.93
619.00	0.94
574.97	0.96
530.97	0.96
485.99	0.95
441.99	0.91
425.98	0.90

398.00	0.92
389.99	0.93
353.97	0.96
309.97	0.94
265.75	0.85
221.98	0.74
211.98	0.71
190.29	0.73
159.97	0.71
129.99	0.63
99.97	0.52
69.98	0.40

STANDARD CONDITION FOR THE PROVISION OF PROFESSIONAL ENGINEERING SERVICES FOR EXISTING STRUCTURES BY LeBLANC LTD.

All engineering services are performed on the basis that the information used is current and correct.
This information may consist of, but is not necessarily limited to:

- information supplied by the client regarding the structure and its components, foundations, soil conditions, antenna and feedline loading on the structure, and other site-specific information.

- information from quality documents and/or drawings in the possession of LeBLANC Ltd., or acquired from field inspections.

It is the responsibility of the client to ensure that the information provided to LeBLANC Ltd., and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications provided and are in non-corroded condition and have not deteriorated. Therefore, we assume that the member capacities have not changed from the "as new" condition.

All services will be performed to meet the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed to in writing. If wind and ice loads or other relevant parameters are to be different than the minimum values recommended by the standards, the client shall specify the requirement. Otherwise, all work will be performed to meet the requirements of the latest revision of TIA/EIA-222-F Standard.

All services are performed in accordance with generally accepted engineering principles and practices. LeBLANC Ltd. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

HATFIELD & DAWSON
CONSULTING ELECTRICAL ENGINEERS
9500 GREENWOOD AVE. N.
SEATTLE, WASHINGTON 98103

JAMES B. HATFIELD, PE
BENJAMIN F. DAWSON III, PE
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PAUL W. LEONARD, PE
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CONSULTANT
BOX 1326
ALICE SPRINGS, NT 5950
AUSTRALIA

NON-IONIZING ELECTROMAGNETIC FIELD MEASUREMENTS

AND ENGINEERING CERTIFICATION

PREPARED FOR

XM SATELLITE RADIO INC.

Satellite Signal Repeater Facility
Site No. POR0-03B

KOIN-TV TOWER
5516 SW BARNES ROAD
MULTNOMAH COUNTY, OREGON

APRIL 2001

INTRODUCTION

Hatfield & Dawson Consulting Engineers has been retained by LCC International, Inc. to evaluate the proposed XM Satellite Radio Inc. wireless terrestrial repeater facility on the KOIN-TV tower for compliance with current Federal Communications Commission (FCC) rules regarding human exposure to radiofrequency (RF) electromagnetic fields (EMFs).

According to information furnished by consultants to XM Satellite Radio, the transmit antenna for the proposed repeater facility will be a single omnidirectional antenna that will be side-mounted on the existing KOIN-TV tower at approximately 390 feet above ground level.

The existing KOIN-TV tower is within a fenced communications site. Thus it is unlikely that anyone other than authorized RF workers could approach near enough to the proposed transmit antenna to cause those persons' RF exposure levels to exceed FCC limits. It is expected that exposure conditions within nearby buildings and near ground level due to RF field contributions from the proposed XM Satellite Radio repeater transmitting antenna will be well below the public RF exposure limits set forth in the FCC rules and the Multnomah County Code.

To verify that the proposed XM Satellite Radio facility will be in compliance with FCC rules regarding human exposure to RF fields, I have performed EMF power density calculations and measurements at specific ground points to determine the exposure conditions that are likely to exist in accessible areas near the proposed facility.

CALCULATIONS OF RF POWER DENSITY AT GROUND LEVEL

RF power densities are computed in accordance with methods described in ***Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields, OET Bulletin 65, August 1997.*** Wireless facilities are required to comply with the FCC "Rules & Regulations" ***CFR 47 §1.1310, Radiofrequency radiation***

exposure limits. The OET Bulletin 65 describes the methods established by the FCC for predicting compliance with the FCC-specified exposure limits.

Compliance is determined by comparing RF field predictions with the general population/uncontrolled environment (i.e., "Public") Maximum Permissible Exposure limits (MPEs) allowed by the FCC rules, as specified in *CFR 47 §1.1310.* The following formula has been used to calculate the power densities at specific locations:

$$mW/cm^2 = 0.36 \times ERP \text{ (watts)} / (\text{Distance in feet})^2$$

This formula is derived from Equation 9 on page 22 of OET Bulletin 65. It includes the effect of ground reflections. The Effective Radiated Power (ERP) depends on the vertical antenna pattern.

ANALYSIS

According to information supplied by XM Satellite Radio, the proposed omnidirectional-type transmitting antenna for the XM Satellite Radio facility will be side-mounted on the existing KOIN-TV tower with a center of radiation of approximately 390 feet above ground level. The antenna is highly directional in the vertical plane and projects the majority of the transmitted RF energy horizontally towards the horizon, and well above all nearby habitable and accessible areas. The maximum ERP from the single transmitting antenna will be less than 13,250 Watts.

The proposed XM Satellite Radio wireless terrestrial repeater facility operates within the frequency range of approximately 2332 - 2345 MHz. The FCC Public MPE limit for this frequency is 1.0 mW/cm^2. This is the same as the frequency-dependent limit given in Table 1, "Non-Ionizing Electromagnetic Radiation Standards" from the Multnomah County Code.

The following theoretical calculations predict the worst-case peak exposure conditions likely to exist near ground level near the KOIN-TV tower due to the proposed XM Satellite Radio facility.

The calculations assume that the vertical pattern of the transmitting antennas suppresses the maximum ERP by a factor of 10 (i.e., 10dB) downwards towards the tower base. Thus it is assumed that the power directed towards the ground is 13,250 / 10 = 1325 Watts.

THEORETICAL ANALYSIS OF PUBLIC EXPOSURE CONDITIONS

Antenna Type:	Omnidirectional with narrow vertical pattern
ERP:	1325 Watts maximum towards ground level
Antenna Height:	390 feet above ground level

The following theoretical calculations predict the peak exposure condition for a six-foot person standing at the nearest approach to the transmit antennas. A six-foot tall person standing near the base of the tower would be approximately 384 feet below the antennas.

Under the worst-case conditions described earlier, the calculated peak power density from the XM Satellite Radio facility is less than approximately 0.0032 mW/cm^2 at all ground-level locations near the KOIN-TV tower. The worst-case calculated exposure condition resulting from the XM Satellite Radio facility is the power density divided by the Public MPE limit for 2332 MHz: 100% x 0.0032 / 1.0 = 0.32% of the Public MPE limit. All accessible areas near ground level in the vicinity of the KOIN-TV tower are expected to have exposure conditions far less than 0.32% of the Public MPE due to the XM Satellite Radio facility.

THEORETICAL ANALYSIS OF CONDITIONS AT THE NEAREST PROPERTY BOUNDARY

According to the drawings furnished by XM Satellite Radio, the nearest property line is approximately 200 feet horizontally north and east of the proposed transmit antenna. The following calculations predict the peak exposure condition at head height for a 6-foot person standing at the nearest property boundary.

The proposed XM Satellite Radio antenna will be 390 feet above ground, and 384 feet vertically above head-height. Thus the hypotenuse slant distance from the proposed antennas to the hypothetical pedestrian would be approximately 433 feet.

Under the worst-case conditions described above, and by use of Equation 9 from OET Bulletin 65, the calculated peak power density from the XM Satellite Radio facility at head height is less than 0.0025 mW/cm^2 at the nearest property line. The calculated exposure condition resulting from the XM Satellite Radio facility at the nearest property line is the power density divided by the Public MPE limit for 2332 MHz: 100% x 0.0025 / 1.0 = 0.25% of the Public MPE limit. All publicly accessible areas near ground level in the vicinity of the property line closest to the KOIN-TV tower are expected to have exposure conditions far less than 0.25% of the Public MPE due to the XM Satellite Radio facility.

RESULTS OF ANALYSIS AND COMPUTATIONS

My calculations show that the maximum predicted RF power densities resulting from the XM Satellite Radio facility in all habitable and accessible areas will be less than 0.32% of the Public MPE percent limit allowed by the FCC rules and the Multnomah County Code.

FCC COMPLIANCE

The FCC has determined through calculations and technical analysis that certain wireless facilities are highly unlikely to cause human RF exposures in excess of FCC guideline limits. In particular, facilities that produce less than 5% of the applicable MPE limit at accessible locations are considered to have such a low impact on overall exposure conditions that they are "categorically excluded" (i.e., exempt) from further study.

As demonstrated above, the proposed XM Satellite Radio repeater facility will produce far less than 5% of the applicable exposure limit for public environments. Therefore, pursuant to §1.1310(b)(3) of the Commission's rules no further calculations, measurements or other RF studies are required, and the proposed XM Satellite Radio facility is presumed to be in compliance with the FCC's RF exposure rules.

The FCC has determined that at sites like KOIN-TV, where multiple broadcast and wireless facilities are co-located, the responsibility for site-wide RF safety compliance is the shared responsibility of all licensees whose facilities produce exposure conditions greater than 5% of the applicable MPE limit. Thus a new applicant is responsible for compliance (or submitting an environmental assessment) at a multiple-facility site only if the proposed facility, when considered alone, would produce exposure conditions in excess of 5% of the MPEs.

If future changes to the KOIN-TV site cause MPEs to be exceeded in public areas, the FCC would not hold XM Satellite Radio responsible for the excessive exposure conditions. According to OET Bulletin 65:

> "...the rules adopted by the FCC specify that, in general, at multiple transmitter sites actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitters produce field strengths or power density levels at the area in question in excess of 5% of the exposure limit (In terms of power density or the square of the electric or magnetic field strength) applicable to their particular transmitter." (See *§1.1306, Actions which are categorically excluded from environmental processing* AND *§1.1307, Actions that may have a significant environmental effect, for which Environmental Assessments (EAs) must be prepared.)*

As demonstrated by worst-case calculations, the proposed XM Satellite Radio facility will produce far less than 5% of the applicable exposure limit for public environments. Therefore,

pursuant to §1.1310(b)(3) of the Commission's rules no further studies are required, and the proposed XM Satellite facility is presumed to be in compliance with the FCC's RF exposure rules.

Furthermore, according to federal regulations, the proposed terrestrial repeater facility is categorically exempt from the requirement for routine environmental processing, and XM Satellite Radio is not responsible for any possible pre-existing or future RF exposure compliance problems at the KOIN-TV site.

This conclusion is based solely on the comparison of predicted RF conditions in specific areas with the corresponding safe exposure limits set forth in the FCC rules. The FCC exposure limits are based on recommendations by federal and private entities with the appropriate expertise in human safety issues.

RECENT MEASUREMENTS OF RF EXPOSURE CONDITIONS

In accordance with the County's Design Review requirements, I performed a pre-construction measurement survey of RF exposure conditions at specific locations in the vicinity of the KOIN-TV tower on April 24, 2001. All measurement locations were along the property line closest to the KOIN-TV tower.

MEASUREMENT EQUIPMENT AND PROCEDURE

All aspects my RF exposure survey conform to the requirements of Section (F)(1) of the Multnomah County Code.

The equipment and measurement procedures used during the survey conform to the most recent FCC guidelines as set forth in FCC/OET Bulletin No. 65, Edition 97-01, released in August, 1997, and the ANSI/IEEE Standard C95.3-1991 (Reaffirmed in 1997), *IEEE Recommended Practice for*

the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave, as per County Code Section (F)(1)(c)

The RF measurements were taken with a Narda, model 8718B RF Survey meter connected to an 8742 shaped-response probe. The 8742 probe allows the meter to indicate RF exposure conditions that are automatically weighted for all frequencies encountered during the survey.

The 8742 probe allows the meter to indicate percentage of the occupational MPE condition, thus the readings with this probe must be multiplied by 5 to convert to percentage of Public MPE.

MEASUREMENT EQUIPMENT

All equipment used for the April 24 measurements has been factory-calibrated within the past 12 months, which is within the manufacturer's suggested periodic calibration interval. The factory calibration procedure uses methods traceable to the National Bureau of Standards.

Item	Make/Model	Serial Number	Calibration Date
RF Survey Meter	Narda 8718B	00001	February 2001
Isotropic Field Probe	Shaped E-Field Probe 8742	01001	May 2000

Based on the specified tolerances of the meter and probe, I estimate that the overall accuracy of the measurements are +/- 1.0 dB which is equivalent to +/- 26% of the indicated MPE readings.

MEASUREMENT PROCEDURE

During the survey I scanned the outdoor, publicly accessible locations along the fence line north of the KOIN-TV tower. At the location of the highest RF exposure readings, the probe was moved from close to ground level up to a height of approximately 2 meters (6' 7"). During this procedure, the "Max Hold" and "Spatial Averaging" features of the survey meter were activated to capture both peak and spatially averaged RF exposure levels simultaneously.

Peak exposure measurements are quicker and easier to obtain, but they overstate exposure conditions. Spatially averaged measurements are more time-consuming, but they yield a more accurate representation of human exposure conditions, and they are in accordance with ANSI/IEEE Standard C95.3-1991. Thus an efficient measurement procedure calls for the use of spatial averaging only at locations where peak measurements indicate high exposure conditions.

In fact, compliance with FCC exposure limits *must* be determined by comparing spatially-averaged, not peak, RF exposure measurements with the MPEs allowed by the FCC rules. This is because MPEs for exposure are given in terms of spatial averages, as indicated by the following passage from OET Bulletin 65:

> "A fundamental aspect of the exposure guidelines is that they apply to power densities or the squares of the electric and magnetic field strengths that are spatially averaged over the body dimensions. Spatially averaged RF field levels most accurately relate to estimating the whole-body averaged SAR that will result from the exposure and the MPEs specified in Table 1 of Appendix A are based on this concept. This means that local values of exposures [i.e., peak readings] that exceed the stated MPEs may not be related to non-compliance if the spatial average of RF fields over the body does not exceed the MPEs. Further discussion of spatial averaging as it relates to field measurements can be found in Section 3 of this bulletin and in the ANSI/IEEE and NCRP reference documents noted there."

Thus any reference to peak exposure measurements is for informational purposes only, and no conclusion regarding RF compliance should be drawn from measured peak exposure values.

MEASUREMENT RESULTS

The following table summarizes the results of my field survey. Please refer to the attached Drawing A0 for measurement locations:

Measurement Point number and Location Description	April 24, 2001 Approx. Time	Spatial Average % of Public MPE
1) Closest public approach, point A at locked gate	2:10 PM	30.5
2) Within 100' east and west of point A along fence	2 – 3 PM	Less than 30

At no time did any publicly accessible measurement point exceed the maximum peak or spatially averaged general population/uncontrolled (i.e., Public) environment MPE percent limit allowed by the FCC or County rules.

Post-construction RF exposure conditions can be predicted from the sum of the calculated conditions due to the proposed XM Satellite facility, and the measured conditions shown in the above table. Thus the worst-case exposure conditions likely to exist at the property line closest to the proposed facility is 0.25% + 30.5% = 30.8% of the Public MPE.

CONCLUSION

Based on my calculations and information supplied to me by XM Satellite Radio representatives, the proposed XM Satellite Radio facility POR0-03B will comply with current FCC rules regarding human exposure to radiofrequency electromagnetic fields. Furthermore, this facility is categorically exempt from the requirement for routine environmental processing.

This conclusion is based solely on the comparison of predicted RF conditions in specific areas with the corresponding safe exposure limits set forth in the FCC rules. The FCC exposure limits are based on recommendations by federal and private entities with the appropriate expertise in human safety issues.

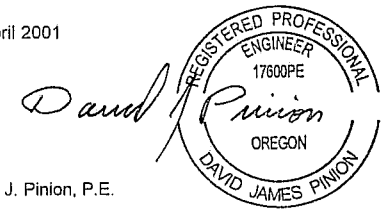
The analysis and conclusions presented in this report do not determine the presence or absence of human health and safety hazards in any area due to any cause.

QUALIFICATIONS

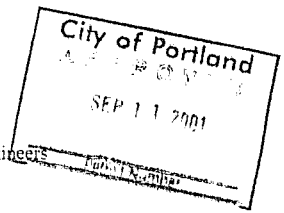
I am an experienced radio engineer whose qualifications are a matter of record with the Federal Communications Commission. I am a partner in the firm of Hatfield & Dawson Consulting Engineers and am registered as a Professional Engineer in the States of Oregon, Washington and California, and I hold an FCC General Radiotelephone Operator License PG-12-21740.

All representations contained herein are true to the best of my knowledge except, when noted, when data has been furnished by others.

26 April 2001



David J. Pinion, P.E.



MULTNOMAH COUNTY
LAND USE PLANNING DIVISION
1600 SE 190TH Avenue Portland, OR 97233
503-988-3043 FAX: 503-988-3389
http://www.multnomah.lib.or.us/lup

NOTICE OF DECISION

This notice concerns a Planning Director decision on the land use case(s) cited and described below.

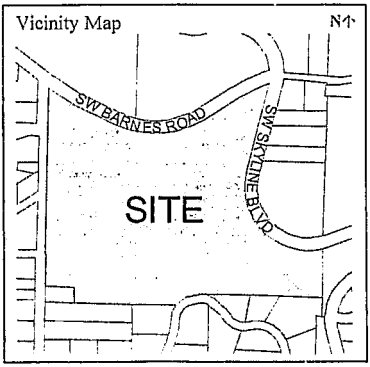
Case File: T2-01-003 (Previously PRE 0-6)

Permit: Modification of a Community Service and Design Review

Location: 5516 SW Barnes Road
TL 85, Sec 6, T1S, R1E, W.M.
Tax Account #R99106-0850

Applicant: Sandra Towne
LCC International Inc.
26703 NE 77th Avenue
Battle Ground, WA 98604

Owner: KOIN - TV
222 SW Columbia Street
Portland, OR 97201



Summary: A request for antenna co-location on an existing wireless tower. KOIN - TV owns and operates the existing 920-foot lattice tower, which was approved under PRE 6-98. The proposed co-location includes a 64-inch omni transmit antenna, a 26-inch receive only satellite dish, and a repeater cabinet to be located inside the existing equipment room.

Decision: Approved with conditions.

Unless appealed, this decision is effective Tuesday, May 29, 2001 at 4:30 PM.

Opportunity to Review the Record: A copy of the Planning Director decision, and all evidence submitted associated with this application, is available for inspection, at no cost, at the Land Use Planning office during normal business hours. Copies of all documents may be purchased at the rate of 30 cents per page. The Director's decision contains the findings and conclusions upon which the decision is based, along with any conditions of approval. For further information on this case, contact Kerry Rappold, Staff Planner at 503-988-3043.

Opportunity to Appeal: This decision may be appealed within 14 days of the date it was rendered, pursuant to the provisions of MCC 37.0640. An appeal requires a $100.00 fee and must state the specific legal grounds on which it is based. To obtain appeal forms or information on the procedure, contact the Land Use Planning offices at 1600 SE 190th Avenue (Phone: 503-988-3043). This decision cannot be appealed to the Land Use Board of Appeals (LUBA) until all local appeals are exhausted.

This decision is final at the close of the appeal period, unless appealed. The deadline for filing an appeal is Tuesday, May 29, 2001 at 4:30 pm.

Applicable Approval Criteria: Multnomah County Code (MCC): MCC 11.15.2852 through .2858, Single Family Residential (R-20); MCC 11.15.7035(B)(6)(d), Radio and Television Transmission Towers; MCC 11.15.7835 through .7850, Design Review.

Copies of the referenced Multnomah County Code sections can be obtained by contacting our office at 503-988-3043 or by visiting our website at http://www.co.multnomah.or.us/lup.

Conditions of Approval

1. Except as otherwise specified in the above conditions, this approval is based upon the Applicant's submitted written testimony, site and development plans, and substantiating documents. The Applicant shall be responsible for implementing the development plan as presented and approved. The Applicant shall comply with the conditions set forth in this case decision, **T2-01-003.**

2. The applicant shall make an appointment with the Staff Planner, Kerry Rappold, at Multnomah County, (503) 988-3043, for building permit sign-off. The applicant shall bring five (5) sets of site and building plans to the County for sign-off prior to submittal of the building permits to the Portland Building Department.

3. Pursuant to MCC 37.0690, this land use permit expires two years from the date the decision is final if; (a) development action has not been initiated; (b) building permits have not been issued; or (c) final survey, plat, or other documents have not been recorded, as required. The property owner may request to extend the timeframe within which this permit is valid, as provided under MCC 37.0690 and 37.0700. Such a request must be made prior to the expiration date of the permit.

4. The applicant shall continuously maintain compliance with the Non-Ionizing Electromagnetic Radiation Standards of MCC .7035 (F)(1) except as may conflict with a federal regulation. Upon functional operation of the new satellite signal repeater equipment, the applicant shall submit a report demonstrating compliance with MCC .7035 (F)(1).

City of Portland
SEP 11 2001

In the matter of T2-01-003.

By: _____ Date May 15, 2001
Kerry Rappold, Planner
For Kathy Busse, Planning Director
Multnomah County Department of Sustainable Community Development
Land Use Planning Division

Notice to Mortgagee, Lien Holder, Vendor, or Seller:
ORS Chapter 215 requires that if you receive this notice it must be promptly forwarded to the purchaser.

STAFF REPORT

Findings of Fact

(Formatting Note: Staff as necessary to address Multnomah County ordinance requirements provides Findings referenced herein. Headings for each finding are underlined. Multnomah County Code requirements are referenced using a bold font. Written responses by the applicant, demonstrating compliance with code criteria, are *italicized*. Planning staff comments and analysis may follow applicant responses. Where this occurs, the notation "Staff" precedes such comments.)

1. **Description of Proposal:**

The applicant requests approval of an antenna co-location on an existing wireless tower. KOIN – TV owns and operates the existing 920-foot lattice tower, which was approved under PRE 6-98. XM Satellite Radio, which will provide Satellite Direct Audio Radio Service (SDARS), proposes to co-locate satellite signal repeater equipment. The proposed co-location includes a 64-inch omni transmit antenna to be mounted on the north leg of the existing 920-foot lattice tower at 392-feet A.G.L. (Above Ground Level), a 26-inch receive only satellite dish to be mounted on an existing ice bridge at approximately 15-feet A.G.L., and a repeater cabinet to be located inside the existing equipment room.

2. **Site and Vicinity Characteristics:**

The subject lot is located at the intersection of SW Barnes Road and SW Skyline Blvd. KOIN TV owns and operates the towers and buildings on the subject property. Access to the property is from SW Barnes Road. The existing towers, buildings and parking areas are situated at the top of the hill. The property has a gradual slope to the northeast and northwest, and slopes steeply to the southwest and southeast. The extreme southwest and southeast portion of the property is designated Slope Hazard Area. Only the southeast portion of the property is forested.

3. **Comments Received:**

An opportunity to comment was mailed on December 6, 2000. No comments were received.

4. **Exhibits**

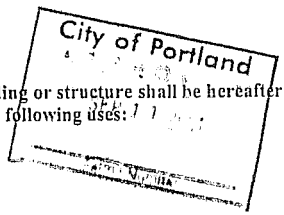
1. Excerpt from Applicant's site plan dated October 4, 2000 (reduced copy).
2. Excerpt from report prepared by Hatfield & Dawson Consulting Electrical Engineers.
3. Excerpt from memorandum prepared by Hatfield & Dawson Consulting Electrical Engineers.

5. **Multnomah County Code**

SINGLE FAMILY RESIDENTIAL (R-20)

11.15.2852 Use

No building, structure, or land shall be used and no building or structure shall be hereafter erected, altered, or enlarged in this district except for the following uses:



* * *

(D) Special uses, such as parks, playgrounds, or community centers, churches, schools, golf courses and uses of similar nature, as provided in MCC .7005 through .7041, when approved by the Hearings Officer. *[Amended 1982, Ord. 330 § 2]*

Staff: The proposed satellite signal repeater equipment (64-inch omni transmit antenna, 26-inch receive only satellite dish, and repeater cabinet, Exhibit 1) is a modification of a Community Service use as designated under Multnomah County Code (MCC) 11.15.7035 (B)(6)(d), which allows the Planning Director to approve additional antennas and accessory uses to permitted antennas. The proposed equipment will be added to the existing 920-foot lattice tower and adjacent facility, which was approved under PRE 6-98.

Community Service CS

11.15.7035(B) Radio and Television Transmission Towers.

* * *

(6) Required sharing of new towers – All new towers shall be designed to structurally accommodate the maximum number of additional users technically practicable, but in no case less than the following:

(d) Once a new tower is approved, additional antennas and accessory uses to permitted antennas may be added to it in accordance with the approved sharing plan if the Planning Director finds that the standards of MCC .7035(B)(7) through (9),(12), (14) and (15) are met.

(i) A request for additional antennas or accessory uses shall be processed under MCC .7835 through .7845, provided the standards of MCC .7850 may only be applied in direct proportion to the extent of the proposed change.

Staff: The applicant's request for an additional antenna and accessory uses on the existing tower and adjacent facility is an allowed use. A structural analysis prepared by a professional engineer demonstrated the tower has sufficient capacity for the proposed use. In addition, the applicant has submitted a copy of the signed lease for XM Satellite Radio. The applicant has demonstrated compliance with the requirements of MCC .7035 (B)(7) through (9), (12), (14) and (15), and also the applicable requirements of MCC. 7850 as described below.

This criterion is satisfied.

(ii) If the proposed change results in an increase in the extent to which the existing use violates the setback and landscape standards of MCC .7035(B)(4)(b) through (d), (B)(5)(b) through (d), and (B)(11)(a), the application for approval shall be considered as an action proceeding by the approval authority, who may approve the change based on the applicable standard of MCC .7035(B)(4)(a), (B)(5)(a), and (B)(11)(a).

Staff: The proposed satellite signal repeater equipment will not result in an increase in the extent to which the existing use violates the setback and landscape standards. Therefore, this approval shall not be considered as an action proceeding.

This criterion is satisfied.

(e) The antennas sharing a tower will generally be arranged as follows, provided changes may be allowed by the approval authority when necessary to accommodate RF interference, topographic circumstances, or tower structure characteristics:

(i) Towers in excess of 200 feet shall be guyed towers with one top-mounted high power television (HPTV) antenna and two side-mounted HPTV antennas. In the alternative, one HPTV antenna may be top-mounted, the second HPTV antenna located below it, and a third HPTV antenna side-mounted.

(ii) No candelabra shall be permitted. No triangular platforms larger than 10 feet on a side shall be permitted. Triangular and T-bar platforms shall not be permitted if mounting of required antennas can be accomplished without such platforms.

(iii) The required microwave facilities, FM antennas, and two-way radio antennas may be located anywhere on the tower above a height of eighty feet above grade, provided the other requirements of this section are met.

Staff: The proposed 64-inch omni transmit antenna will be side-mounted on the north leg of the existing 920-foot lattice tower, and the 26-inch receive only satellite dish will be mounted on an existing ice bridge. No platforms are proposed for the transmit antenna and receive only dish. The proposed omni transmit antenna will be at 392-feet above ground level (A.G.L.) on the existing tower.

These criteria are satisfied.

* * *

(7) Visual impact – The applicant shall demonstrate that the tower can be expected to have the least visual impact on the environment, taking into consideration technical, engineering, economic and other pertinent factors. Towers clustered at the same site shall be of similar height and design, whenever possible. Towers shall be painted and lighted as follows:

(a) Towers 200 feet or less in height shall have a galvanized finish or be painted silver. If there is heavy vegetation in the immediate area, such towers shall be painted green from base to treeline, with the remainder painted silver or given a galvanized finish.

(b) Towers more than 200 feet in height shall be painted in accordance with regulations of the Oregon State Aeronautics Division.

(c) Towers shall be illuminated as required by the Oregon State Aeronautics Division. However, no lighting shall be incorporated if not required by the Aeronautics Division or other responsible agency.

(d) Towers shall be the minimum height necessary to provide parity with existing similar tower supported antenna, and shall be freestanding where the negative visual effect is less than would be created by use of a guyed tower.

Applicant: Not applicable. This proposal is not a tower proposal it is an antenna co-location onto an existing tower. The tower has been designed and approved. This application proposes to mount (1) 64-inch tall and 2-5/8-inch diameter omni antenna at the 392-foot level of an existing 920-foot existing lattice tower; (1) 26 inch diameter receiving dish mounted onto an existing ice-bridge located at the base of the tower; and (1) equipment cabinet located inside an existing equipment building. This small antenna and receiving dish will present an insignificant contribution to visual clutter in this plan district, which includes hundreds of antennas. Nor will the proposed facility contribute to any significant degradation in the appearance of the area. The size and height at which the proposed additional facilities will be mounted will not significantly lessen the character of the area.

No lighting is proposed with this application. Required lighting already exists on the tower and equipment building. The color of the antenna and receiving dish is dull-gray. The receiving dish is the same color as the existing ice-bridge (dull-gray). The antenna because of its color and distance from the ground will blend into the sky.

Staff: The criterion listed above apply to the approval of a new tower, the applicant only requests approval of a side-mounted transmit antenna, and a receive-only satellite dish. The proposed satellite signal repeater equipment will not create a negative visual effect because it will blend with the existing structures, and be very small in size.

These criteria are satisfied.

(8) **Maintenance impacts – Equipment at a transmission facility shall be automated to the greatest extent possible to reduce traffic and congestion. The applicant shall describe anticipated maintenance needs, including frequency of service, personnel needs, equipment needs, and traffic, noise or safety impacts of such maintenance. Where the site abuts or has access to a collector and local street, access for maintenance vehicles shall be exclusively by means of the collector street.**

Applicant: This application will not create additional traffic or use of public facilities. One technician in one vehicle will perform routine maintenance approximately once a month. The equipment cabinet for this application will be located inside the existing equipment building. This building was designed and built for such co-location uses.

Staff: Maintenance for the proposed satellite signal repeater equipment will be very minimal. No significant increase in traffic will result from the proposed use. XM Satellite Radio maintenance people will use the existing access off SW Barnes Road, which is the only access to the property.

This criterion is satisfied.

(9) **Parking – A minimum of two parking spaces shall be provided on each site; an additional parking space for each two employees shall be provided at facilities which require on-site personnel.**

Applicant: The existing site provides more than adequate parking. Several parking spaces exist on site. There are no on-site personnel.

Staff: Twenty-two gravel parking spaces are provided for the existing facilities and towers. No additional parking spaces are required for the proposed satellite signal repeater equipment.

This criterion is satisfied.

(12) **Accessory uses – Accessory uses shall include only such buildings and facilities necessary for transmission function and satellite ground stations associated with them, but shall not include broadcast studios, offices, vehicle storage areas, nor other similar uses not necessary for the transmission function.**

Accessory uses may include studio facilities for emergency broadcast purposes or for other special, limited purposes found by the approval authority not to create significant additional impacts nor to require construction of additional buildings or facilities exceeding 25 percent of the floor area of other permitted buildings.

Applicant: This application is for an XM satellite signal repeater facility. The proposal for this site consists of one (1) 64-inch omni transmit antenna to be mounted on the north leg of the existing 920-foot lattice tower at 392 feet A.G.L.; one (1) 26-inch receive-only satellite dish to be mounted on an existing ice bridge @ approx. 15 feet AGL; the repeater cabinet will be located inside the existing equipment room occupying far less than 25% of the floor area of the existing permitted equipment building. Details of the installation are shown on the construction drawings submitted with this application.

Staff: The proposed satellite signal repeater equipment is necessary for transmission function. No broadcast studios, offices, vehicle storage areas, or other similar uses not necessary for the transmission function are included with the applicant's proposal.

This criterion is satisfied.

(14) **Agency Coordination – The applicant shall provide the following information in writing from the appropriate responsible official:**

(a) **A statement from the Federal Aviation Administration that the application has not been found to be a hazard to air navigation under Part 77, Federal Aviation Regulations, or a statement that no compliance with Part 77 is required.**

(b) **A statement from the Oregon State Aeronautics Division that the application has been found to comply with the applicable regulations of the Division, or a statement that no such compliance is required.**

(c) **A statement from the Federal Communications Commission that the application complies with the regulations of the Commission or a statement that no such compliance is necessary.**

(d) **The statements in (a) through (c) may be waived when the applicant demonstrates that a good faith, timely effort was made to obtain such responses but that no such response was forthcoming, provided the applicant conveys any response received; and further provided any subsequent response that is received is conveyed to the approval authority as soon as possible.**

levels below 20 microwatts/cm^2 or the minimum sensitivity of the instruments used, whichever is lesser, shall be deemed zero for further computational purposes.

(c) The calculated average levels at the three points specified in (4)(b) after installation of the new source, including both the background and the new source.

(d) The calculated levels at the boundaries of other sources at which the new source may cause a detectable increase in level.

(e) The calculated level at the predicted point of maximum radiation off of the property on which the new source is located caused by the new source along with the measured background NIER at this point. This measurement shall meet the requirements of (4)(b).

(f) The geographic coordinates (latitude and longitude or state plane coordinates) of each point of measurement and/or calculation shall be furnished.

Applicant: [Excerpt from report prepared by Hatfield & Dawson Consulting Electrical Engineers, Exhibit 2]

THEORETICAL ANALYSIS OF PUBLIC EXPOSURE CONDITIONS

Antenna Type:	*Omnidirectional with narrow vertical pattern*
ERP:	*1325 Watts maximum towards ground level*
Antenna Height:	*390 feet above ground level*

The following theoretical calculations predict the peak exposure condition for a six-foot person standing at the nearest approach to the transmit antennas. A six-foot tall person standing near the base of the tower would be approximately 384 feet below the antennas.

Under the worst-case conditions described earlier, the calculated peak power density from the XM Satellite Radio facility is less than approximately 0.0032 mW/cm^2 at all ground level locations near the KOIN-TV tower. The worst-case calculated exposure condition resulting from the XM Satellite Radio facility is the power density divided by the Public MPE [Maximum Permissible Exposure] limit for 2332 MHz: 100% x 0.0032/1.0 = 0.32% of the Public MPE limit. All accessible areas near ground level in the vicinity of the KOIN-TV tower are expected to have exposure conditions far less than 0.32% of the Public MPE due to the XM Satellite Radio facility.

THEORETICAL ANALYSIS OF CONDITIONS AT THE NEAREST PROPERTY BOUNDARY

According to the drawings furnished by XM Satellite Radio, the nearest property line is approximately 200 feet horizontally north and east of the proposed transmit antenna. The following calculations predict the peak exposure condition at head height for a 6-foot person standing at the nearest property boundary.

The proposed XM Satellite Radio antenna will be 390 feet above ground, and 384 feet vertically above head-height. Thus the hypotenuse slant distance from the proposed

antennas to the hypothetical pedestrian would be approximately 433 feet.

Under the worst-case conditions described above, and by use of Equation 9 from OET Bulletin 65, the calculated peak power density from the XM Satellite Radio facility at head height is less than 0.0025 mW/cm^2 at the nearest property line. The calculated exposure condition resulting from the XM Satellite Radio facility at the nearest property line is the power density divided by the Public MPE limit for 2332 MHz: 100% x 0.0025 / 1.0 = 0.25% of the Public MPE limit. All publicly accessible areas near ground level in the vicinity of the property line closest to the KOIN-TV tower are expected to have exposure conditions far less than 0.25% of the Public MPE due to the XM Satellite Radio facility.

RESULTS OF ANALYSIS AND COMPUTATIONS

My calculations show that the maximum predicted RF power densities resulting from the XM Satellite Radio facility in all habitable and accessible areas will be less than 0.32% of the Public MPE percent limit allowed by the FCC rules and the Multnomah County Code.

[Excerpt from memorandum prepared by Hatfield & Dawson Consulting Electrical Engineers, Exhibit 3]

The purpose of this memorandum is to supply your office with additional information regarding the recent pre-construction NIER field survey I performed in the vicinity of the KOIN-TV tower in Multnomah County on 24 April. Specifically, this memorandum provides details of the field survey in relation to the requirements of Multnomah County Code MCC .7035(F)(4). We are requesting that the requirements of MCC .7035(F)(4)(iii) be waived in this instance.

My survey found a single location along the property line closest to the KOIN-TV tower where exposure conditions were approximately 30% of the County and FCC limit for public exposure to RF energy. Rule MCC .7035(F)(4)(iii) states that where initial measurements indicate that the RF exposure environment is greater than 1/5 of the County's exposure limits, then additional NIER measurements" ... shall be made for a continuous period of 168 hours" at that location.

The rationale for this extraordinary long measurement requirement is unstated; the only plausible technical reason for a duration-of-measurement requirement would be to allow for the measurement process to account for the changes in the RF exposure environment due to nearby two-way or other intermittent sources of RF energy. However, there is no reason why any NIER measurement survey would require a week for completion; all one has to do to ensure that RF exposure conditions are at their peak is to perform measurements during the mid afternoon hours on a weekday when two-way radio traffic is at a maximum.

In any case the requirements of MCC .7035(F)(4)(iii) are unnecessary and inappropriate for measurements at the KOIN-TV site. All significant sources of RF energy at that site are broadcast transmitters which operate continuously and at full power at all times except during maintenance or when equipment breakdowns occur. Thus under normal circumstances the RF exposure environment at the KOIN-TV site is always at its maximum. A one-hour survey, like the one I performed, is adequate for the purposes of determining compliance with County and FCC rules.

Staff: The measurements for the existing non-ionizing radiation and the calculated levels for the proposed satellite signal repeater equipment comply with the requirements of MCC .7035(F)(4). The measurements for the existing non-ionizing radiation level submitted by the applicant exceed the limit established under .7035(F)(4)(b)(ii). However, the standard under .7035(F)(4)(b)(iv) allows for measurements to be made during a time other than the intervals specified by (b)(ii) or (b)(iii). The measurements submitted by the applicant accurately reflect the existing non-ionizing radiation level because the sources of RF energy at that site are broadcast transmitters which operate continuously, and at full power, at all times except during maintenance or when equipment breakdowns occur. Therefore, a requirement to monitor the RF emissions over a longer period of time, such as 12 hours or 7 days, would not produce a different result.

These criteria are satisfied.

(5) **A Community Service use designation or modification thereof may be granted if the levels calculated in (F)(4), including the existing measured background, do not exceed the limits set forth in (F)(1), and if a new tower is required, the siting standards of this section are met. However, if the calculated levels, including existing measured background at any point specified in (F)(4) exceed one-third of the maximum levels of (F)(1), then, the approval shall be conditional upon measurements made after the new source is installed showing that the maximum levels of (F)(1) are not exceeded. If the calculated levels exceed the maximum level of (F)(1), the application shall be denied.**

Design Review

11.15.7835 Action on Preliminary Design Review Plan

Within ten business days following filing of the preliminary design review plan, the Planning Director shall mail to the applicant summary findings and conclusions indicating the relationship between the preliminary design review plan and the criteria and standards listed in MCC .7850, .7855, and .7860.

11.15.7840 Final Design Review Plan

Following receipt by the applicant of the summary findings and conclusions under MCC .7835, the applicant may submit a revised preliminary design review plan or shall file with the Planning Director a final design review plan, which shall contain the following, drawn to scale:

(A) Site Development and Landscape Plans, indicating the locations and specifications of the items described in MCC .7830(F) and (G), as appropriate;

(B) Architectural drawings, indicating floor plans, sections, and elevations; and

(C) Proposed minor exceptions from yard, parking, and sign requirements.

11.15.7850 Design Review Criteria

(A) Approval of a final design review plan shall be based on the following criteria:

(l) **Relation of Design Review Plan Elements to Environment.**

(a) **The elements of the design review plan shall relate harmoniously to the natural environment and existing buildings and structures having a visual relationship with the site.**

Applicant: The ground equipment cabinet for this proposal will be located in the existing equipment structure. The 64-inch tall omni antenna will be mounted at the 392-foot level of the existing 920-foot tower.

Staff: The proposed satellite signal repeater equipment will relate harmoniously to the natural environment and existing buildings and structures. The proposed 64-inch omni transmit antenna will barely be perceptible on the 920-foot tower. It will be painted a dull-gray color, which should not noticeably contrast with the red and white tower. The proposed 26-inch receive-only satellite dish will also be painted dull-gray which will match the existing ice-bridge color. No additional lighting is proposed with this application.

This criterion is satisfied.

(b) **The elements of the design review plan should promote energy conservation and provide protection from adverse climatic conditions, noise, and air pollution.**

Applicant: As mentioned above an existing equipment structure will house the proposed equipment. This equipment structure was designed and permitted to specifically house communication equipment. The appropriate HVAC system exists in the structure. Noise is not an issue because the structure was designed and built to insulate noise.

Staff: The proposed repeater cabinet will be located inside the existing equipment building. Energy usage, and noise should be very minimal for the proposed satellite signal repeater equipment. The proposed omni transmit antenna and receive-only satellite dish will be mounted on structures exposed to the climatic conditions.

This criterion is satisfied.

(c) **Each element of the design review plan shall effectively, efficiently, and attractively serve its function. The elements shall be on a human scale, inter-related, and shall provide spatial variety and order.**

Applicant: N/A.

Staff: The proposed satellite signal repeater equipment will either be concealed from view or incorporated into the existing tower and ice bridge. Therefore they will effectively and efficiently meet the design review requirements.

This criterion is satisfied.

(2) **Safety and Privacy – The design review plan shall be designed to provide a safe environment, while offering appropriate opportunities for privacy and transitions from public to private spaces.**

antennas to the hypothetical pedestrian would be approximately 433 feet.

Under the worst-case conditions described above, and by use of Equation 9 from OET Bulletin 65, the calculated peak power density from the XM Satellite Radio facility at head height is less than 0.0025 mW/cm^2 at the nearest property line. The calculated exposure condition resulting from the XM Satellite Radio facility at the nearest property line is the power density divided by the Public MPE limit for 2332 MHz: 100% x 0.0025 / 1.0 = 0.25% of the Public MPE limit. All publicly accessible areas near ground level in the vicinity of the property line closest to the KOIN-TV tower are expected to have exposure conditions far less than 0.25% of the Public MPE due to the XM Satellite Radio facility.

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My calculations show that the maximum predicted RF power densities resulting from the XM Satellite Radio facility in all habitable and accessible areas will be less than 0.32% of the Public MPE percent limit allowed by the FCC rules and the Multnomah County Code.

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Staff: The measurements for the existing non-ionizing radiation and the calculated levels for the proposed satellite signal repeater equipment comply with the requirements of MCC .7035(F)(4). The measurements for the existing non-ionizing radiation level submitted by the applicant exceed the limit established under .7035(F)(4)(b)(ii). However, the standard under .7035(F)(4)(b)(iv) allows for measurements to be made during a time other than the intervals specified by (b)(ii) or (b)(iii). The measurements submitted by the applicant accurately reflect the existing non-ionizing radiation level because the sources of RF energy at that site are broadcast transmitters which operate continuously, and at full power, at all times except during maintenance or when equipment breakdowns occur. Therefore, a requirement to monitor the RF emissions over a longer period of time, such as 12 hours or 7 days, would not produce a different result.

These criteria are satisfied.

(5) **A Community Service use designation or modification thereof may be granted if the levels calculated in (F)(4), including the existing measured background, do not exceed the limits set forth in (F)(1), and if a new tower is required, the siting standards of this section are met. However, if the calculated levels, including existing measured background at any point specified in (F)(4) exceed one-third of the maximum levels of (F)(1), then, the approval shall be conditional upon measurements made after the new source is installed showing that the maximum levels of (F)(1) are not exceeded. If the calculated levels exceed the maximum level of (F)(1), the application shall be denied.**

Design Review

11.15.7835 *Action on Preliminary Design Review Plan*

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(A) Site Development and Landscape Plans, indicating the locations and specifications of the items described in MCC .7830(F) and (G), as appropriate;

(B) Architectural drawings, indicating floor plans, sections, and elevations; and

(C) Proposed minor exceptions from yard, parking, and sign requirements.

11.15.7850 Design Review Criteria

(A) Approval of a final design review plan shall be based on the following criteria:

Applicant: This proposal is designed with safety measures. The equipment cabinet is securely locked at all times and is located inside a locked equipment building. Existing alarm systems will phone designated security responses if triggered by malfunction or security breeches. The tower compound is security fenced and tagged with safety signs. The existing tower and equipment structure is located within a large acreage of open space on top of a hill. There is a large amount of transition area between the proposed project and private residents.

Staff: Safety and privacy concerns were addressed with the construction of the existing buildings and towers. The facility compound is enclosed within a chain link fence. Access to the compound is only through one entrance. The proposed satellite signal repeater equipment will not affect the safety and privacy of the site.

This criterion is satisfied.

(3) **Special Needs of Handicapped – Where appropriate, the design review plan shall provide for the special needs of handicapped persons, such as ramps for wheelchairs and braille signs.**

Applicant: N/A – The site is wheelchair accessible.

Staff: These requirements were addressed with the design of the existing buildings. This criterion is not applicable to the proposed development.

(4) **Preservation of Natural Landscape – The landscape and existing grade shall be preserved to the maximum practical degree, considering development constraints and suitability of the landscape or grade to serve their functions. Preserved trees and shrubs shall be protected during construction.**

Applicant: This proposal does not require any excavation or ground disturbance. No existing landscape or natural vegetation will be removed or altered.

Staff: The proposed satellite signal repeater equipment will not require any ground disturbance. No trees or shrubs or other landscaping will be impacted by the proposed development.

This criterion is satisfied.

(5) **Pedestrian and Vehicular circulation and Parking – The location and number of points of access to the site, the interior circulation patterns, the separations between pedestrians and moving and parked vehicles, and the arrangement of parking areas in relation to buildings and structures, shall be designed to maximize safety and convenience and shall be harmonious with proposed and neighboring buildings and structures.**

Applicant: This proposal does not require any additional circulation or parking then already exists at the tower. The existing access is a gated gravel driveway off of SW Barnes Road. This proposal will require no more than one vehicle a month for routine maintenance.

(l) **Relation of Design Review Plan Elements to Environment.**

(a) **The elements of the design review plan shall relate harmoniously to the natural environment and existing buildings and structures having a visual relationship with the site.**

Applicant: The ground equipment cabinet for this proposal will be located in the existing equipment structure. The 64-inch tall omni antenna will be mounted at the 392-foot level of the existing 920-foot tower.

Staff: The proposed satellite signal repeater equipment will relate harmoniously to the natural environment and existing buildings and structures. The proposed 64-inch omni transmit antenna will barely be perceptible on the 920-foot tower. It will be painted a dull-gray color, which should not noticeably contrast with the red and white tower. The proposed 26-inch receive-only satellite dish will also be painted dull-gray which will match the existing ice-bridge color. No additional lighting is proposed with this application.

This criterion is satisfied.

(b) **The elements of the design review plan should promote energy conservation and provide protection from adverse climatic conditions, noise, and air pollution.**

Applicant: As mentioned above an existing equipment structure will house the proposed equipment. This equipment structure was designed and permitted to specifically house communication equipment. The appropriate HVAC system exists in the structure. Noise is not an issue because the structure was designed and built to insulate noise.

Staff: The proposed repeater cabinet will be located inside the existing equipment building. Energy usage, and noise should be very minimal for the proposed satellite signal repeater equipment. The proposed omni transmit antenna and receive-only satellite dish will be mounted on structures exposed to the climatic conditions.

This criterion is satisfied.

(c) **Each element of the design review plan shall effectively, efficiently, and attractively serve its function. The elements shall be on a human scale, inter-related, and shall provide spatial variety and order.**

Applicant: N/A.

Staff: The proposed satellite signal repeater equipment will either be concealed from view or incorporated into the existing tower and ice bridge. Therefore they will effectively and efficiently meet the design review requirements.

This criterion is satisfied.

(2) **Safety and Privacy – The design review plan shall be designed to provide a safe environment, while offering appropriate opportunities for privacy and transitions from public to private spaces.**

Staff: The proposed satellite signal repeater equipment will not require any changes in pedestrian and vehicular circulation and parking. Twenty-two gravel parking spaces are provided for the existing facilities and towers.

This criterion is satisfied.

(6) **Drainage – Surface drainage systems shall be designed so as not to adversely affect neighboring properties or streets.**

Applicant: This proposal does not require any drainage systems.

Staff: The proposed satellite signal repeater equipment will not increase stormwater runoff. Therefore, no improvements are required to the surface drainage system.

This criterion is satisfied.

(7) **Buffering and Screening – Areas, structures and facilities for storage, machinery and equipment, services (mail, refuse, utility wires, and the like), loading and parking, and similar accessory areas and structures shall be designed, located, buffered or screened to minimize adverse impacts on the site and neighboring properties.**

Applicant: This application proposes an equipment cabinet to be located inside the existing equipment building and an omni antenna located at the 392-foot level of the existing tower.

Staff: The proposed satellite signal repeater equipment are designed to minimize adverse impacts on the site and neighboring properties. The omni transmit antenna will be side mounted on the existing 920-foot tower, and the receive-only satellite dish will be mounted on an existing ice bridge. The repeater cabinet will be located inside the existing equipment building. Due to the size, location, and color (dull-gray) of the proposed omni transmit antenna and receive-only dish, they will not be highly visible.

This criterion is satisfied.

(8) **Utilities – All utility installations above ground shall be located so as to minimize adverse impacts on the site and neighboring properties.**

Applicant: This application proposes that the equipment cabinet be located inside the existing equipment building. The equipment will not be visible. The antenna is 64-inch tall and 2-5/8 inches in diameter it will be mounted at the 392-foot level of the existing 920-foot tower. The proposed omni antenna will be miniscule compared to the existing tower.

Staff: Utility installations for the proposed satellite signal repeater equipment will not have an adverse impact on the site or the neighborhood. Coax cable will be installed between the repeater cabinet and the antenna and dish. No other cable or connections will be required for the proposed antenna or dish.

This criterion is satisfied.

(9) **Signs and Graphics – The location, texture, lighting, movement, and materials of all exterior signs, graphics or other informational or directional features shall be**

compatible with the other elements of the design review plan and surrounding properties.

Applicant: Any signs or graphics at this site are FCC and OSHUA regulated.

Staff: No additional signs or graphics are required for the proposed satellite signal repeater equipment.

This criterion is satisfied.

Conclusion

Based on the findings and other information provided above, this application for a modification of a Community Service approval satisfies, with appropriate conditions, the applicable Multnomah County Zoning requirements.

TIMP
FROELICH
CONSULTING
ENGINEERS, INC

MAIN OFFICE
6969 SW Hampton Street
Tigard, Oregon 97223
503.624-7005/503.624-9770 FAX

CENTRAL OREGON
231 SW Scalehouse Loop, Suite 101
Bend, Oregon 97701
541.383-1828/541.383-7696 FAX

FAX COVER SHEET

Date: 8/29/01

Transmittal To: Miklos Ugrai

Company: City of Portland, Office of Planning and Development Review

FAX Number: 503-823-5434

Job Name/Number: Brownstone Forest Heights/ Application # 01-146302-CO

Transmittal From: Rod Hammerberg

Pages Attached: 1

Comments:

Mr. Ugrai:

Here is our response to your structural checksheet for the above mentioned application number. Please review and call if you have any questions

Thanks,

Rod

PLEASE CONTACT US IF THIS FACSIMILE IS ILLEGIBLE OR IF IT HAS MISSING PAGES

City of Portland
SEP 11 2001
Initial Number

TIM R. FROELICH CONSULTING ENGINEERING

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Bend, Oregon 97701
541.383-1828/541.383-7696 FAX

MEMORANDUM (Structural Check Sheet Response)

To: Miklos Ugrai
From: Rod Hammerberg
Date: 8/29/01
Project: Forest Heights phase 2 NW Wilshire Ln
Project #: 00-T123A
Client: Brownstone Homes
Subject: Structural Checksheet permit # 01-146302

Mr. Ugrai

The following is a response list to your comments on the above stated project dated 8/28/01

20) The horizontal diaphragm nailing is to be 8d @ 6" o.c. at boundaries and edges and 12" o.c. field nailing. Sheet S3.3 states the blocked diaphragm area is to be edge nailed at the boundaries and at the edges. You can find the floor diaphragm nailing on the structural notes sheet S1.1 under the nailing and fastening section.

21) Please refer to notes on Sheet S3.7.

22) These units are classified dependent because the end units take the windward load in a side to side motion protecting the interior units which are not designed to take a wind load in the side to side motion. All the units are designed to take there own seismic load in either the front to back or side to side motion

Written By: Rod Hammerberg, E.I.T
cc: File

Property Information
Multnomah County, Oregon

Property Information | Tax Summary | Assessment History | Improvement Information | New Search | Search Results | Logoff

Search Results for R326925

Owner Name	Property ID Number
KOIN-TV INC	R326925
Owner Address	**Situs Address**
222 SW COLUMBIA ST PORTLAND, OR 97201-6600	5516 SW BARNES RD PORTLAND, OR
Alternate Account Number	**Neighborhood**
R991060850	C760
Map Tax Lot	**Levy Code Area**
1S1E06 -00500	(097) 101 ; 134 ; 143 ; 170 ; 770 ; 198 ; 304 ; 309 ; 311 ; 611

Property Description

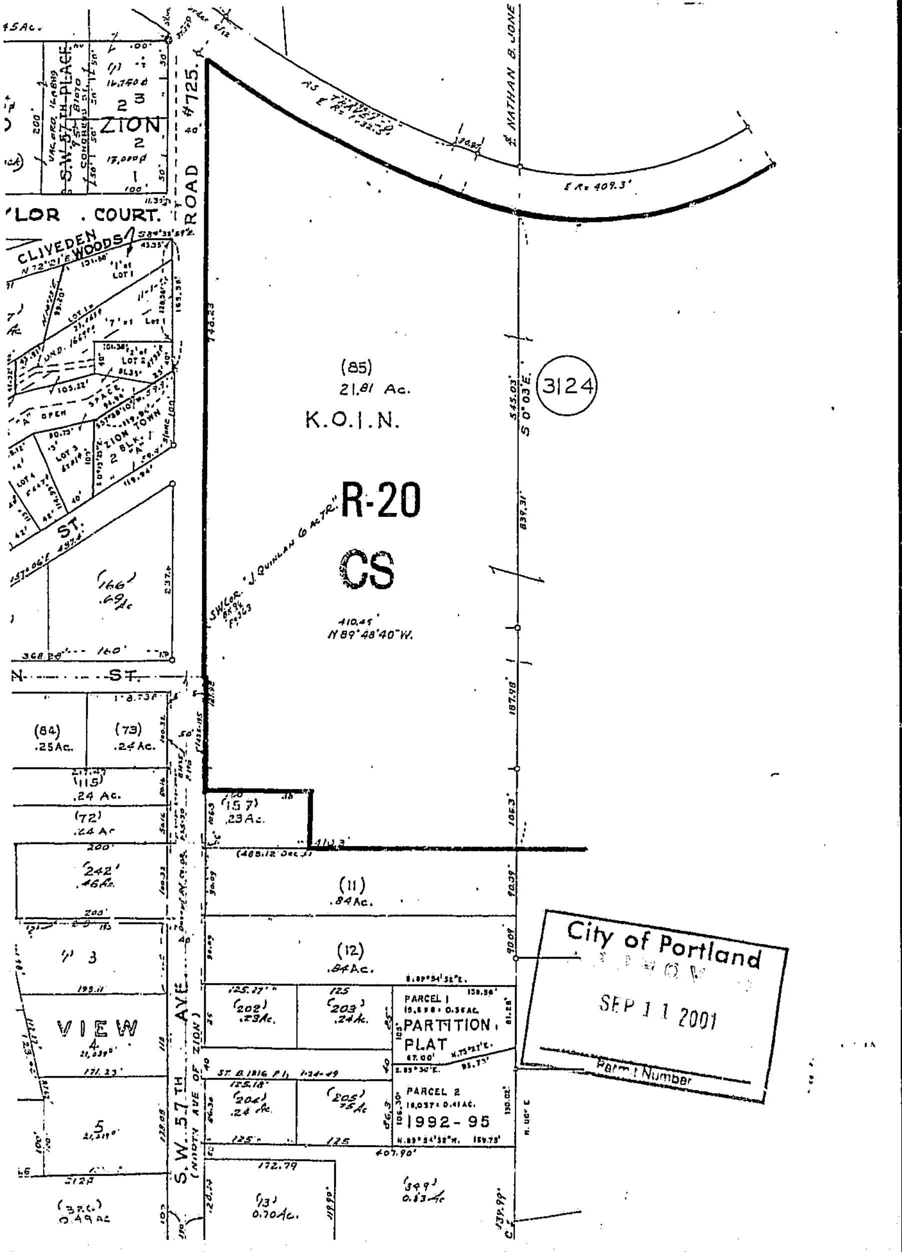
Deed	Instrument Year
INST	15540209
Exemption	Expiration Date
Tax Roll Description	Map Number
SECTION 06 1 S 1 E; TL 500 21.81 ACRES SEE SUB-0851	3123 OLD 1S1E06 -00500
Parcel	Special Interest
Use Code	Year Built Acreage
REAL ESTATE	0.25
Split/Sub Account	Split/sub Account Message:
	Property Not Involved With Split/Merge

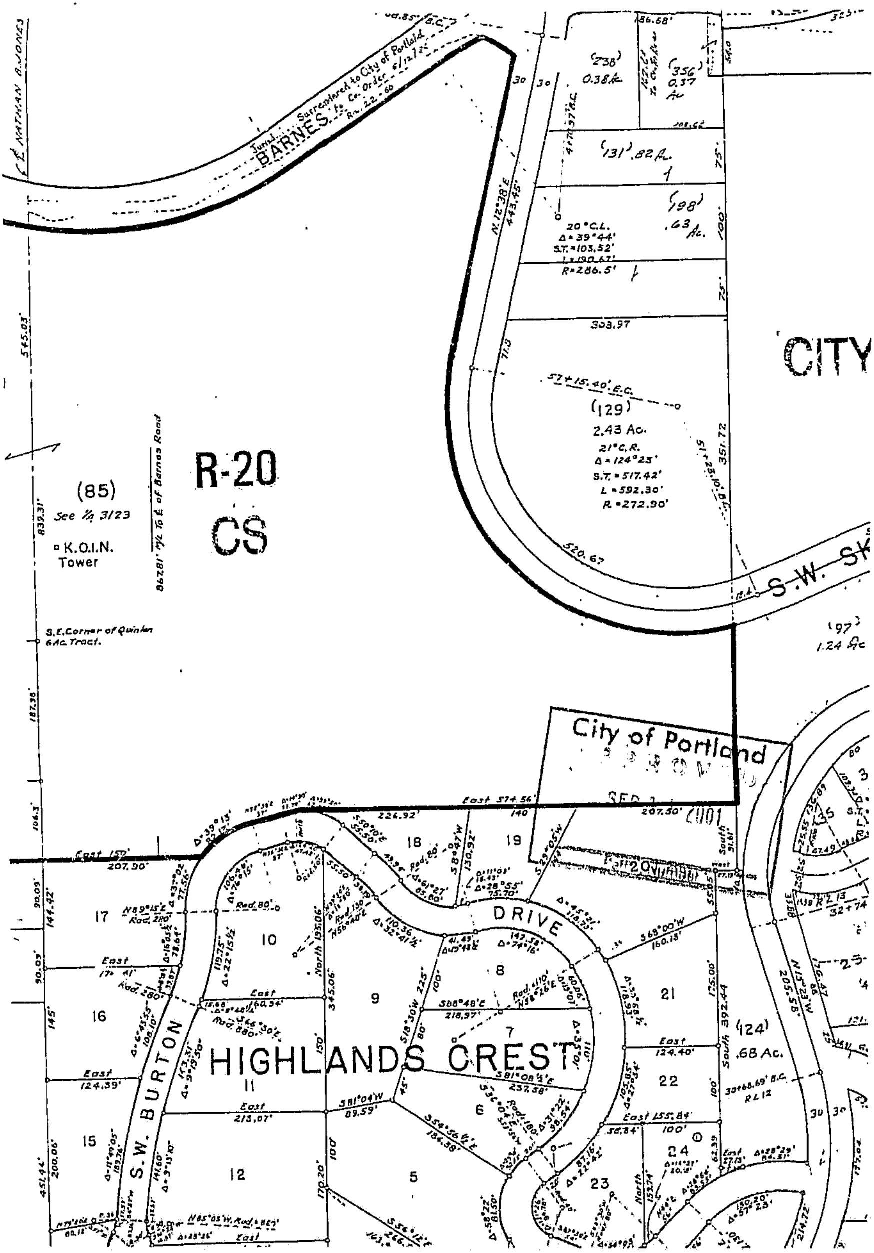
Special Account Information

Land Information (Unedited and Uncertified)

ID	Type	Acres	Sq Ft	Market Value
L1	CVCL - CONVERTED COMMERCIAL SEGMENT			$1,429,200

INFORMATION SUBJECT TO DISCLAIMER - SEE HOME PAGE




R-20
CS
(85)
See ¼ 3/23
K.O.I.N. Tower
BARNES
CITY
City of Portland
S.W. BURTON
DRIVE
HIGHLANDS CREST
(129)
2.43 Ac.
(124)
.68 Ac.
(97)
1.24 Ac
(131) .82 Ac.
(198) .63 Ac.
(238) 0.38 Ac.
(356) 0.37 Ac
S.E. Corner of Quinlan 6 Ac. Tract.
E NATHAN B. JONES

MULTNOMAH COUNTY
LAND USE PLANNING DIVISION
1600 SE 190TH Avenue Portland, OR 97233
503-988-3043 FAX: 503-988-3389
http://www.multnomah.lib.or.us/lup

NOTICE OF DECISION

This notice concerns a Planning Director decision on the land use case(s) cited and described below.

Case File: T2-01-003 (Previously PRE 0-6)

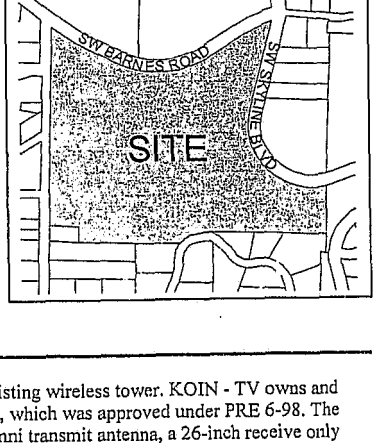
Permit: Modification of a Community Service and Design Review

Location: 5516 SW Barnes Road
TL 85, Sec 6, T1S, R1E, W.M.
Tax Account #R99106-0850

Applicant: Sandra Towne
LCC International Inc.
26703 NE 77th Avenue
Battle Ground, WA 98604

Owner: KOIN - TV
222 SW Columbia Street
Portland, OR 97201

Vicinity Map



Summary: A request for antenna co-location on an existing wireless tower. KOIN - TV owns and operates the existing 920-foot lattice tower, which was approved under PRE 6-98. The proposed co-location includes a 64-inch omni transmit antenna, a 26-inch receive only satellite dish, and a repeater cabinet to be located inside the existing equipment room.

Decision: Approved with conditions.

Unless appealed, this decision is effective Tuesday, May 29, 2001 at 4:30 PM.

City of Portland
SEP 11 2001

Opportunity to Review the Record: A copy of the Planning Director decision, and all evidence submitted associated with this application, is available for inspection, at no cost, at the Land Use Planning office during normal business hours. Copies of all documents may be purchased at the rate of 30-cents per page. The Director's decision contains the findings and conclusions upon which the decision is based, along with any conditions of approval. For further information on this case, contact Kerry Rappold, Staff Planner at 503-988-3043.

Opportunity to Appeal: This decision may be appealed within 14 days of the date it was rendered, pursuant to the provisions of MCC 37.0640. An appeal requires a $100.00 fee and must state the specific legal grounds on which it is based. To obtain appeal forms or information on the procedure, contact the Land Use Planning offices at 1600 SE 190th Avenue (Phone: 503-988-3043). This decision cannot be appealed to the Land Use Board of Appeals (LUBA) until all local appeals are exhausted.

This decision is final at the close of the appeal period, unless appealed. The deadline for filing an appeal is Tuesday, May 29, 2001 at 4:30 pm.

Applicable Approval Criteria: Multnomah County Code (MCC): MCC 11.15.2852 through .2858, Single Family Residential (R-20); MCC 11.15.7035(B)(6)(d), Radio and Television Transmission Towers; MCC 11.15.7835 through .7850, Design Review.

Copies of the referenced Multnomah County Code sections can be obtained by contacting our office at 503-988-3043 or by visiting our website at http://www.co.multnomah.or.us/lup.

Conditions of Approval

1. Except as otherwise specified in the above conditions, this approval is based upon the Applicant's submitted written testimony, site and development plans, and substantiating documents. The Applicant shall be responsible for implementing the development plan as presented and approved. The Applicant shall comply with the conditions set forth in this case decision, **T2-01-003.**

2. The applicant shall make an appointment with the Staff Planner, Kerry Rappold, at Multnomah County, (503) 988-3043, for building permit sign-off. The applicant shall bring five (5) sets of site and building plans to the County for sign-off prior to submittal of the building permits to the Portland Building Department.

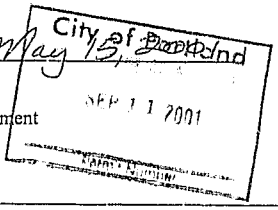
3. Pursuant to MCC 37.0690, this land use permit expires two years from the date the decision is final if; (a) development action has not been initiated; (b) building permits have not been issued; or (c) final survey, plat, or other documents have not been recorded, as required. The property owner may request to extend the timeframe within which this permit is valid, as provided under MCC 37.0690 and 37.0700. Such a request must be made prior to the expiration date of the permit.

4. The applicant shall continuously maintain compliance with the Non-Ionizing Electromagnetic Radiation Standards of MCC .7035 (F)(1) except as may conflict with a federal regulation. Upon functional operation of the new satellite signal repeater equipment, the applicant shall submit a report demonstrating compliance with MCC .7035 (F)(1).

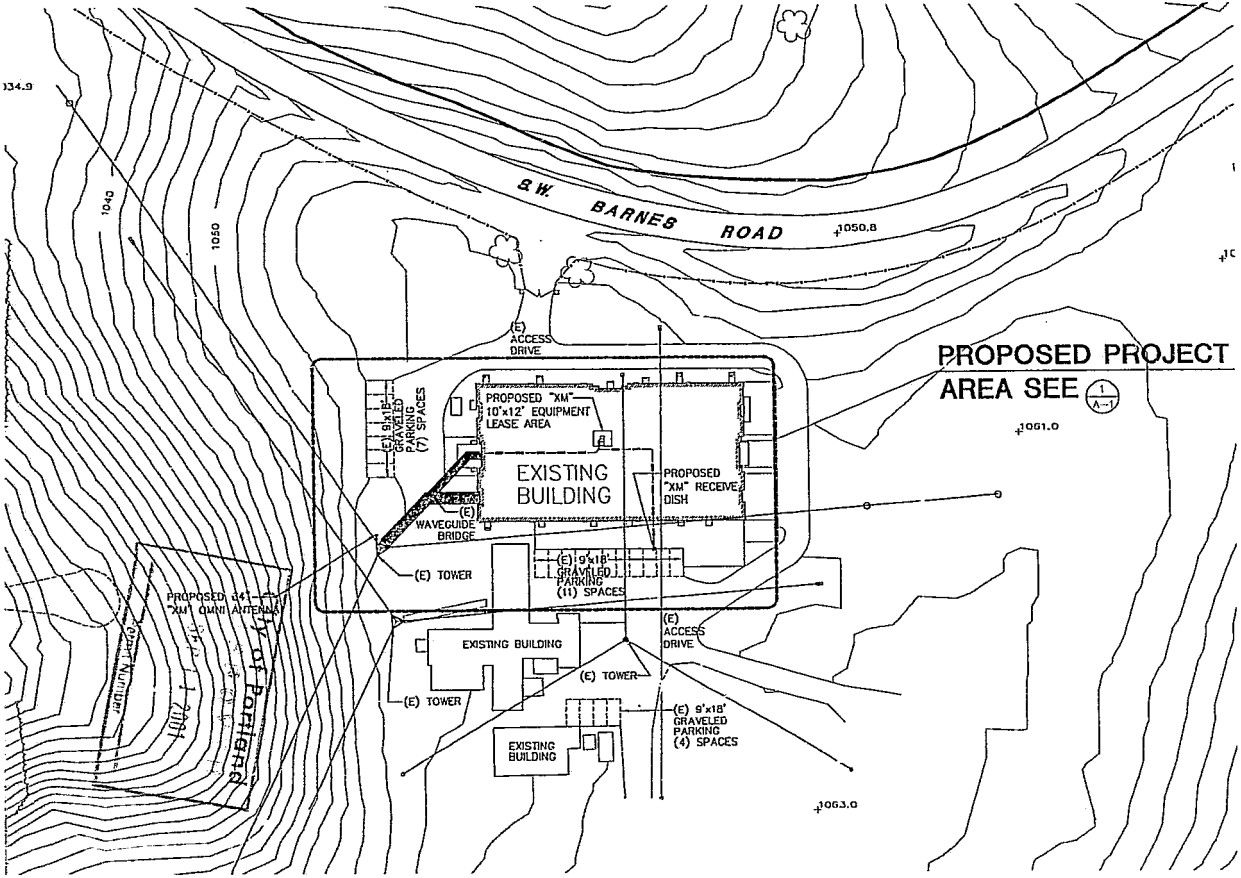
In the matter of T2-01-003:

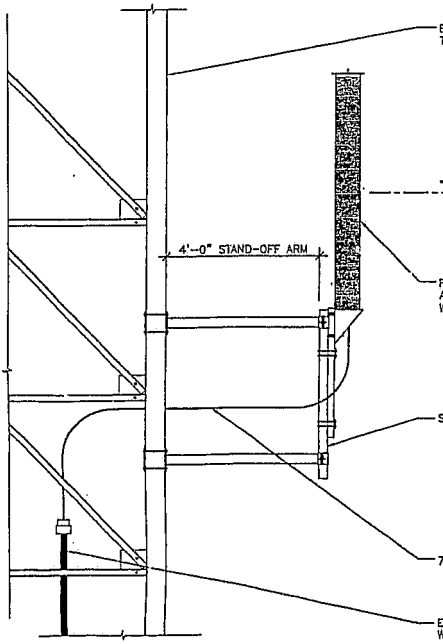
By: Kerry Rappold
Kerry Rappold, Planner
For Kathy Busse, Planning Director
Multnomah County Department of Sustainable Community Development
Land Use Planning Division

Date May 15, 2001



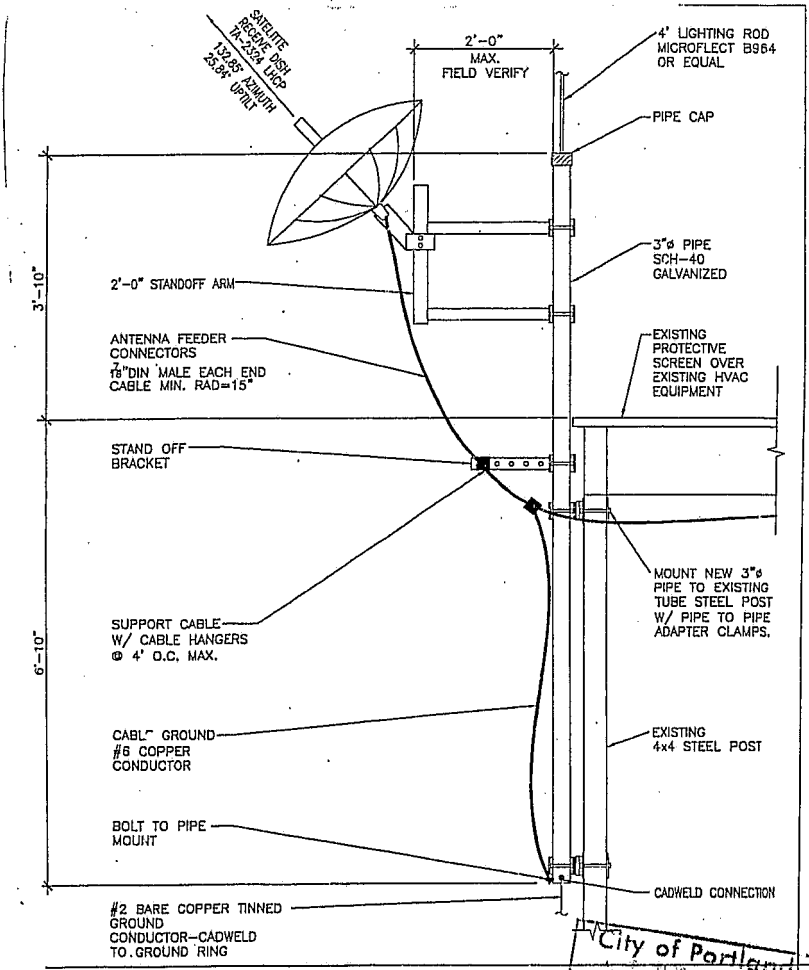
Notice to Mortgagee, Lien Holder, Vendor, or Seller:
ORS Chapter 215 requires that if you receive this notice it must be promptly forwarded to the purchaser.


S.W. BARNES ROAD
1050.8
1061.0
1063.0
1040
1050
(E) ACCESS DRIVE
PROPOSED "XM" 10'x12' EQUIPMENT LEASE AREA
EXISTING BUILDING
PROPOSED "XM" RECEIVE DISH
(E) 9'x18' GRAVELED PARKING (7) SPACES
(E) WAVEGUIDE BRIDGE
(E) TOWER
(E) 9'x18' GRAVELED PARKING (11) SPACES
PROPOSED 84'-0" XM OMNI ANTENNA
EXISTING BUILDING
(E) TOWER
(E) ACCESS DRIVE
(E) TOWER
(E) 9'x18' GRAVELED PARKING (4) SPACES
EXISTING BUILDING
PROPOSED PROJECT AREA SEE 1/A-1
City of Portland
JUN 1 2004



OMNI ANTENNA MOUNT DETAIL

SCALE	
1/2"=1'-0"	2



SATELLITE RECEIVE DISH MOUNT

SCALE: 3/4"=1'-0"

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