Oakland City Planning Commission STAFF REPORT

Case File Number CM10-131 **August 4, 2010**

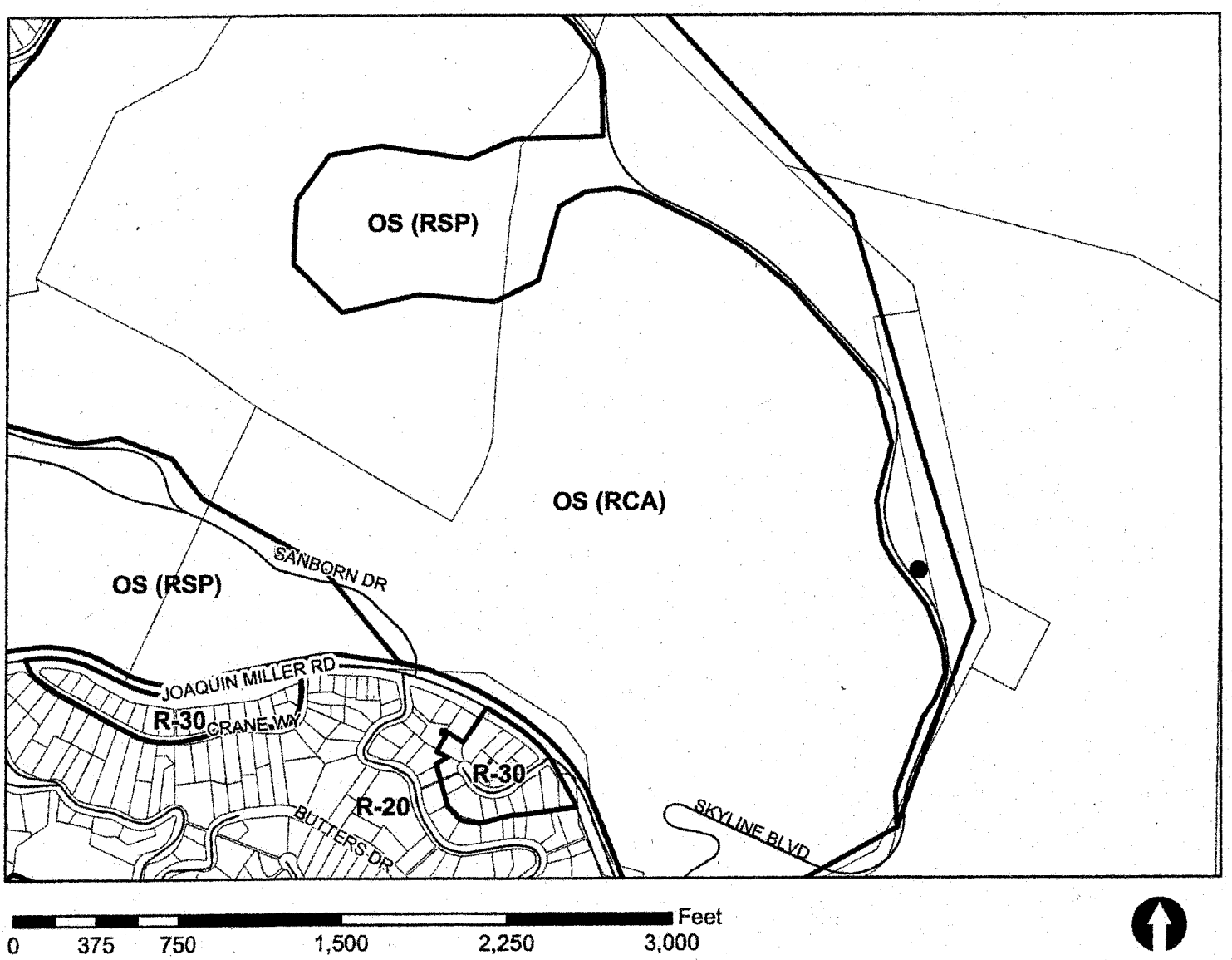
Location:	**Skyline Boulevard (north of Roberts park, east side of street)**
Assessor's Parcel Number:	**None**
Proposal:	To install a 41'-5"-tall Monopole Telecommunications Facility in the public right-of-way along Skyline Boulevard.
Applicant/ Phone Number:	Sharon James / NextG (for Verizon) (408) 426-6629
Owner:	City of Oakland
Planning Permits Required:	Major Conditional Use Permit with two (2) sets of additional findings to allow a Monopole Telecommunications Facility in the OS Zone (OMC Sec. 17.11.080, 128.080(C), 134.020(A)(3)(f))
General Plan:	Urban Open Space
Zoning:	OS (RSP) Open Space (Region-Serving Park) Zone
Environmental Determination:	Exempt, Section 15270 of the State CEQA Guidelines: Projects Which Are Disapproved
Historic Status:	No Historic Status (vacant portion of public right-of-way)
Service Delivery District:	IV – San Antonio/Fruitvale
City Council District:	4 – Quan
Date Filed:	June 3, 2010
Staff Recommendation:	To deny the application
Finality of Decision:	*Appealable to City Council within 10 days*
For Further Information:	Contact case planner **Aubrey Rose, Planner II** at **(510) 238-2071** or arose@oaklandnet.com

SUMMARY

The applicant Sharon James of NextG (for Verizon) requests Planning Commission approval of a Major Conditional Use Permit with two (2) sets of additional findings to install a 41'-5"-tall Monopole Telecommunications Facility in the public right-of-way. The request requires Planning Commission review, pursuant to the Planning Code, because the proposed project involves a Monopole in an Open Space Zone.

Staff recommends denial of the requested permits as described in this report, subject to Findings for Denial (Attachment A).

CITY OF OAKLAND PLANNING COMMISSION



Case File: CM10-131
Applicant: Sharon James/NextG
Address: Skyline Blvd, east side of street (north of Roberts Park entrance)
Zone: OS (RSP)

PROPERTY DESCRIPTION

The property is an unpaved portion of City public right-of-way situated alongside a two-way section of Skyline Boulevard lacking sidewalks. The site is adjacent to the street entrance to Roberts Park (East Bay Regional Park District), indicated by signage. To the rear of the site is a fire trail leading into the park with a wooden fence facing the street. Both sides of the street are lined by forests consisting primarily of Redwoods. The only man-made features present at or adjacent to the site are the park sign, trail fence, and No Parking Signs. The closest structures similar in height are traffic signals and lights standards located at the terminus of Joaquin Miller Drive at Skyline Boulevard located approximately 2,500-radial-feet to the south and a light standard on Skyline Boulevard located approximately 2,000-radial-feet to the north located at a crosswalk. There are no structures directly along the public right-of-way close to the height of the proposed poles in proximity to the proposed site.

PROJECT DESCRIPTION

The project is to install a 41'-5"-foot tall wooden Monopole Telecommunications Facility with two (2) panel antennas attached to the 41'-5" wooden pole at 33'-5" top height. The lease area would measure a few square feet in area and the Monopole would be set back approximately ten-feet from the edge of street pavement. The Monopole would also have a utility meter, equipment cabinet (24" tall x 36"wide x 14" deep) and large battery (33" tall x 6" wide x 6" deep) attached to it at between 7'-6" and 19'-7" in height, respectively. All attachments will be painted to match the color of the wooden pole. The purpose of the project is to improve cellular telephone reception in the area. Other carriers would be eligible to apply to co-locate on or use the services of the Monopole.

GENERAL PLAN ANALYSIS

The proposed project site is located in an Urban Open Space of the General Plan's Land Use & Transportation Element (LUTE). The Intent of the area is: "*To identify, enhance and maintain land for parks and open space. Its purpose is to maintain and urban park, schoolyard, and garden system which provides open space for outdoor recreation, psychological and physical well-being, and relief from the urban environment.*" The site is located in a Maintain and Enhance area of the LUTE. The proposal does not conform to the LUTE or to the following Policies of the General Plan's Open Space, Conservation and Recreation (OSCAR) Element:

> POLICY OS-6.1: INTERGOVERNMETNAL COORDINATION
> Coordinate Oakland's open space planning with other agencies, including adjacent cities and counties, the Port of Oakland, and the East Bay Regional Park District.
>
> POLICY OS-10.2: MINIMIZING ADVERSE VISUAL IMPACTS
> Encourage site planning for new development which minimizes adverse visual impacts and takes advantages of opportunities for new vistas and scenic enhancement.
>
> POLICY OS-10.4: RETENTION OF CITY-OWNED OPEN SPACE IN SCENIC CORRIDORS
> Retain City-owned parcels adjacent to Skyline Boulevard, Shepherd Canyon Road, and other scenic roadways to preserve panoramic views, vegetation, and natural character.

The proposal is not in conformance with the General Plan. The location is along a natural wooded corridor serving as a gateway to a City facility and regional park. The area offers relief for citizens and

area residents from the built environment. The character of the area should be maintained for the continued enjoyment by residents and to maintain the economic viability of facilities to attract regional visitors.

ZONING ANALYSIS

The proposed project site is located within the OS (RSP) Open Space (Region-Serving Park) Zone. The Intent of the OS (RSP) Zone is: "*to create, preserve, and enhance land for permanent open space to meet the active and passive recreational needs of Oakland residents and to promote park uses which are compatible with surrounding land uses and the city's natural environment. The zone is typically appropriate in areas of public open space only.*" The proposal is not consistent with the Intent of the Zoning District or with the following Purposes of the Zoning regulations:

> *"To especially protect and improve the appearance and orderliness of major trafficways and transit lines and views therefrom, thereby increasing the enjoyment of travel, reducing traffic hazards, and enhancing the image of Oakland derived by residents, businesspeople, commuters, visitors, and potential investors;*
>
> *To protect the very substantial public investment in, and the character and dignity of, public buildings, open spaces, thoroughfares, and rapid transit lines"* (OMC Sec. 17.07.030(L), (M))

The proposal is also not consistent with the following development standard for Monopoles:

> *The equipment shelter or cabinet must be concealed from public view or made compatible with the architecture of the surrounding structures or placed underground.* (OMC Sec. 17.128.080(A)(2))

In conclusion, the proposal is inconsistent with the Planning Code and findings required to approve the project cannot be made (Attachment A – Findings for Denial). The proposed structure would not preserve open space and would not be compatible with the minimal built environment and prevailing natural environment in the area. The design is bulky as it would contain equipment and the area does not contain any other large poles such as light standards, telephone poles, or telecommunications facilities such as monopoles. Lastly, the proposed facility is not complementary to Roberts Park.

ENVIRONMENTAL DETERMINATION

The California Environmental Quality Act (CEQA) Guidelines statutorily exempt projects which are disapproved (Section 15270) and the proposal is therefore not subject to further Environmental Review.

KEY ISSUES AND IMPACTS

The applicant has submitted a Site Design Alternatives Analysis as required for a facility lacking concealment. The Analysis indicates no preferred sites containing buildings for attachment located within the area. Staff finds the Analysis to hold merit, especially since the Analysis is generally meant to apply to facilities that are smaller than a Monopole and can be attached to a building. However, the proposal would create adverse impacts to a wooded corridor serving as a gateway to City and regional facilities located in a park/open space area. Staff is not opposed to the use; however, due to lack of concealment, the facility would be incompatible with the surrounding natural environment. Therefore,

staff recommends the Planning Commission deny the requested Major Conditional Use Permit and two (2) sets of additional findings for a Monopole Telecommunications Facility in the Open Space Zone.

East Bay Regional Park District representatives have contacted the Planning & Zoning Department to express concern regarding the application, due to the proximity of the project site to the entrance of Roberts Park.

RECOMMENDATIONS:

1. Affirm staff's environmental determination.
2. Deny the Major Conditional Use Permit and two (2) sets of additional findings.

Prepared by:

Aubrey Rose

AUBREY ROSE
Planner II

Approved by:

Scott Miller

SCOTT MILLER
Zoning Manager

Approved for forwarding to the
City Planning Commission:

ERIC ANGSTADT
Deputy Director
Community and Economic Development Agency

ATTACHMENTS:

A. Findings for Denial
B. Plans with Photo-Simulations
C. Network diagram (general)
D. Site Design Alternatives Analysis
E. Radio Frequency Analysis (RF Emissions Report) by Jerrold T. Bushberg dated May 20, 2010

Attachment A: Findings for Denial

This proposal does not meet the required findings under General Use Permit Criteria (OMC Sec. 17.134.050), Conditional Use Permit Criteria for Monopoles (OMC Sec. 17.128.080(C)), and Design Review for Monopoles (OMC Sec. 17.128.080(B)), as set forth below. Required findings that cannot be made are shown in bold type; explanations as to why these findings cannot be made are in normal type.

SECTION 17.134.050 – GENERAL USE PERMIT CRITERIA:

A. That the location, size, design, and operating characteristics of the proposed development will be compatible with and will not adversely affect the livability or appropriate development of abutting properties and the surrounding neighborhood, with consideration to be given to harmony in scale, bulk, coverage, and density; to the availability of civic facilities and utilities; to harmful effect, if any, upon desirable neighborhood character; to the generation of traffic and the capacity of surrounding streets; and to any other relevant impact of the development.

This finding cannot be made: the proposed Monopole would not be compatible with the surrounding open space/region-serving park area, would contain unsightly attached equipment, and would be excessively tall and bulky in comparison to the minimal examples of man-made structures found in the area. The design of the tall pole with attached equipment along a scenic stretch of Skyline Boulevard that is unencumbered by similar man-made structures (including power poles and light standards) will adversely affect the neighborhood character. Manmade objects in the vicinity are essentially limited to necessary No Parking signs, a trail fence, and a regional park sign, which are much smaller than the proposed 41'-5"-tall Monopole.

E. That the proposal conforms in all significant respects with the Oakland Comprehensive Plan and with any other applicable plan or development control map which has been adopted by the City Council.

This finding cannot be made: the proposal does not conform to the Intent of the Urban Open Space of the General Plan: "*To identify, enhance and maintain land for parks and open space. Its purpose is to maintain and urban park, schoolyard, and garden system which provides open space for outdoor recreation, psychological and physical well-being, and relief from the urban environment.*" or to the following Policies of the General Plan's Open Space, Conservation and Recreation (OSCAR) Element:

> POLICY OS-6.1: INTERGOVERNMENTAL COORDINATION
> Coordinate Oakland's open space planning with other agencies, including adjacent cities and counties, the Port of Oakland, and the East Bay Regional Park District.
>
> POLICY OS-10.2: MINIMIZING ADVERSE VISUAL IMPACTS
> Encourage site planning for new development which minimizes adverse visual impacts and takes advantages of opportunities for new vistas and scenic enhancement.
>
> POLICY OS-10.4: RETENTION OF CITY-OWNED OPEN SPACE IN SCENIC CORRIDORS
> Retain City-owned parcels adjacent to Skyline Boulevard, Shepherd Canyon Road, and other scenic roadways to preserve panoramic views, vegetation, and natural character.

The location is along a natural wooded corridor serving as a gateway to City and regional parks and facilities. The area offers relief for citizen and area residents from the built environment. The relatively unspoiled character of the area should be maintained for the continued enjoyment by residents and to

maintain the economic viability of facilities to attract regional visitors. Furthermore, the East Bay Regional Park District contacted CEDA about their concerns of such an imposing structure in a scenic open space area,

SECTION 17.128.080(C) – CONDITIONAL USE PERMIT CRITERIA FOR MONOPOLES.

1. The project must meet the special design review criteria listed in subsection B of this section.

These findings cannot be made as described in the following section of this Attachment.

3. The proposed project must not disrupt the overall community character.

This finding cannot be made: the area consists predominantly of the natural environment featuring Redwood groves. Manmade objects in the vicinity are essentially limited to necessary No Parking signs, a trail fence, and a regional park sign. The addition of a tall pole supporting equipment along a scenic stretch of Skyline Boulevard that is **unencumbered** by similar man-made structures (including power poles and light standards) will disrupt the overall community character.

SECTION 17.128.080(B) – DESIGN REVIEW CRITERIA FOR MONOPOLES.

1. Collocation is to be encouraged when it will decrease visual impact and collocation is to be discouraged when it will increase negative visual impact.

The project does not involve collocation; the proposal is to install new facilities in an area completely lacking such structures.

2. Monopoles should not be sited to create visual clutter or negatively affect specific views.

The Monopole would negatively impact a wooded corridor essentially serving as a gateway to a City facility and regional park. The only manmade structures along this stretch of Skyline Boulevard are No Parking signs, a park entrance sign, and a trail fence, which are much smaller than the proposed 41'-5"-tall Monopole. Installation of such tall structures where none exist would adversely impact the aesthetic quality of the area. Furthermore, it is not clear from NextG whether additional Monopoles in this area would be necessary to completely service Verizon's needs. See Attachment C for a depiction of how NextG's system works. It is our understanding that a minimum of 6-8 Monopoles are needed to service the facility housing the base station equipment, which would further dramatically affect specific views and create greater visual clutter.

3. Monopoles shall be screened from the public view wherever possible.

The Monopole would not be screened; it would be ten-feet from the road in an area where no other structures similar in height exist and would have bulky equipment attached to such Monopole

4. The equipment shelter or cabinet must be concealed from public view or made compatible with the architecture of the surrounding structures or placed underground. The shelter or cabinet must be regularly maintained.

The equipment cabinet would be pole mounted and therefore would not be screened. The pole would therefore be bulky in comparison with a facility having ground-mounted equipment.

5. Site location and development shall preserve the preexisting character of the surrounding buildings and land uses and the zone district as much as possible. Wireless communication towers shall be integrated through location and design to blend in with the existing characteristics of the site to the extent practical. Existing on-site vegetation shall be preserved or improved, and disturbance of the existing topography shall be minimized, unless such disturbance would result in less visual impact of the site to the surrounding area.

The Monopole would be incompatible with the area consisting of open space with parks and no tall manmade structures because it would not be concealed. The proposed structure would not preserve open space and would not be compatible with the minimal built environment and prevailing natural environment in the area. The design is relatively bulky as it would contain equipment and the area does not contain any other large poles such as light standards, telephone or power poles, or telecommunications facilities such as monopoles.

NextG Networks Inc.

OAKLAND HILLS
VRZ1013A-OHN30
10000 SKYLINE BLVD.
OAKLAND, CA. 91649

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE AREAS GOVERNING CODES.

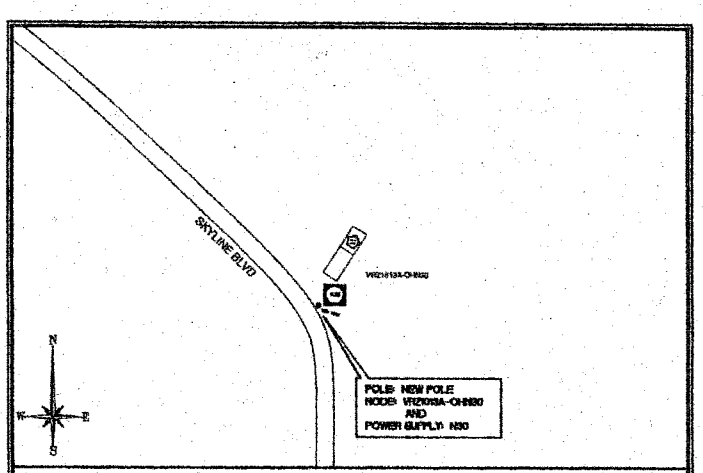
1. STATE ADMINISTRATIVE CODE
2. STATE BUILDING CODE
3. ANSI/EIA-222-F LIFE SAFETY CODE NFPA-101-1988
4. STATE MECHANICAL CODE
5. STATE PLUMBING CODE
6. STATE ELECTRIC CODE
7. LOCAL BUILDING CODE
8. CITY/COUNTY ORDINANCES

CODE COMPLIANCE

PROPERTY INFORMATION

CUSTOMER:	NEXTG
PROJECT:	OAKLAND HILLS
NODE:	VRZ1013A-OHN30
LATITUDE:	37.81330
LONGITUDE:	-122.17985
STREET ADDRESS:	10000 SKYLINE BLVD.
CITY, STATE:	OAKLAND, CA. 91649
POLE# :	NEW POLE
POLE TYPE:	WOOD UTILITY POLE
RAD CENTER / ANTENNA HEIGHT:	32'-0"
ANTENNA TYPE:	DB972G65E3KM
AZIMUTH FOR ANTENNA:	135° AND 295°
POWER TO POLE:	METERED AT NODE
POLE ACCESS:	STREET ACCESS
POLE OWNER:	N/A
POLE LOCATION & DESCRIPTION:	10000 SKYLINE BLVD.

PROJECT SUMMARY



VICINITY MAP

THE PROJECT CONSISTS OF THE INSTALLATION AND OPERATION OF ANTENNAS AND ASSOCIATED EQUIPMENT CABINETS FOR NEXTG. THE INSTALLATION OF GROUND MOUNTED EQUIPMENT CABINETS, ANTENNAS ON AN EXISTING STREET LIGHT, WOOD POLE, TRAFFIC SIGNAL AND NEW STEEL POLES.

PROJECT DESCRIPTION

INSTALL / PLACE NEW FIBER TO NEW OR EXISTING POLE, INSTALL EITHER CBNL OR PANEL ANTENNAS AND ALL ASSOCIATED BRACKETS IN ACCORDANCE TO CONSTRUCTION SPECIFICATIONS. REMOVAL ANY EXISTING FACILITIES IN ACCORDANCE TO GOVERNING CONSTRUCTION GUIDELINES.

PROJECT SCOPE

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811

Know what's below.
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SHEET	DESCRIPTION	REV.
1	TITLE SHEET	0
2	UTILITY NODE / REPEATER POLE EQUIPMENT PROFILES	0
3	SYSTEM OVERVIEWS	0
4	UTILITY POLE EQUIPMENT TYPICALS	0
		0
		0
		0

SHEET INDEX

DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

GENERAL CONTRACTOR NOTES

NextG Networks Inc.
2216 O'TOOLE AVE.
SAN JOSE, CALIFORNIA 95131
PHONE: (408) 934-1580

PROJECT INFORMATION:
10000 SKYLINE BLVD.
OAKLAND, CA. 91649

CURRENT ISSUE DATE:
2/25/10

PERMIT SUBMISSION:

REV.	DATE	DESCRIPTION	

PLANS PREPARED BY:
HP COMMUNICATIONS INC.
13341 Tuxedo Cyn. Rd.
Corona, CA. 92883
PHONE: (951) 471-1919

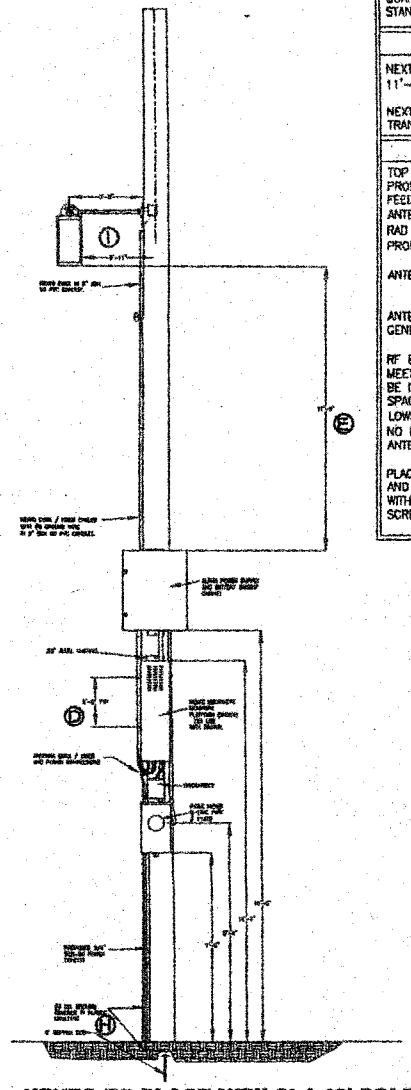
PLANS APPROVED BY:
NextG Networks Inc.
REP.:

COMMENTS:

SHEET TITLE:
NEXTG NETWORKS
OAKLAND HILLS PROJECT
POLE PROFILE VRZ1013A-OHN30

SHEET NUMBER: 1
REVISION:
1 OF 4

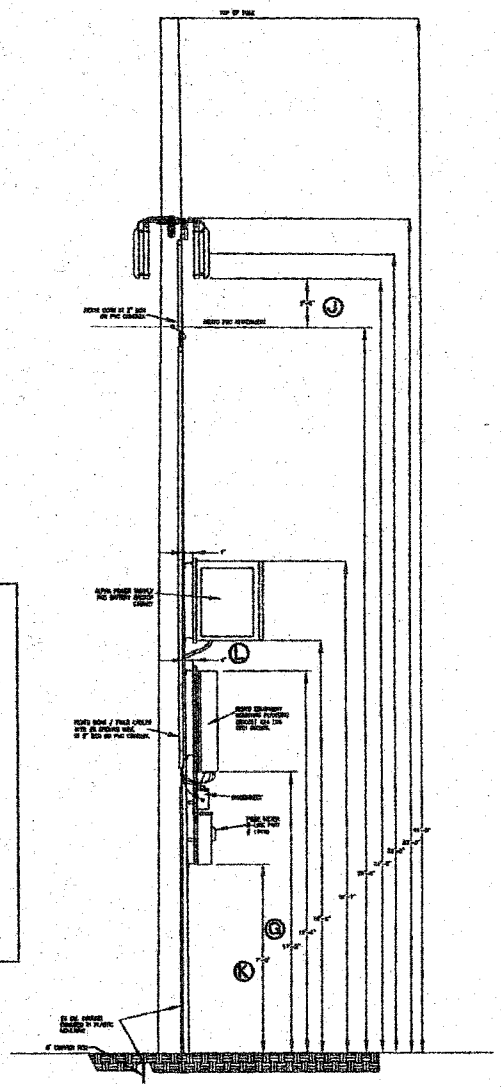
MAKE READY
QUARTER STEP POLE ACCORDING TO GO95 STANDARDS
NEW CONSTRUCTION
NEXTG TO INSTALL SHROUD KIT SH001 @ 11'-3" AGL NEXTG TO PLACE NEW METAL POLE AND TRANSFER ALL SIGNAGE.
NOTES:
TOP OF POLE: 41'-5" PROPOSED SECONDARY: UNDERGROUND FEED. ANTENNA KIT H.O.A: 33'-5" RAD CENTER OF ANTENNA: 32'-0" PROPOSED NEXTG H.O.A: 29'-0" ANTENNA TYPE: 12"X24" ANDREW DIRECTIONAL ANTENNA(S). ANTENNA OUTPUT DOES NOT EXCEED GENERAL POPULATION EXPOSURE LIMITS. RF EMISSION PLACARDS / SIGNAGE MEETING THE FCC REQUIREMENTS SHALL BE IN A LOCATION VISIBLE FROM CLIMBING SPACE AND BE AFFIXED TO THE POLE NO LOWER THAN 9'-0" ABOVE GROUND LINE & NO HIGHER THAN 3'-0" BELOW THE ANTENNA. PLACARDS / SIGNAGE ARE UVA RESISTANT AND SHALL BE ATTACHED TO THE POLE WITH GALVANIZED NAILS OR GALVANIZED SCREWS.



NEXTG TO PLACE NEW CL4 40' POLE

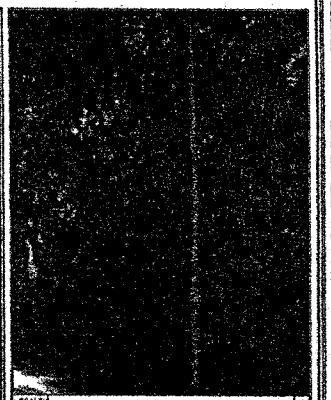
SCALE: N.T.S. | UTILITY POLE DETAIL POLE# NEW POLE | LOOKING WEST | A

- Ⓐ – 48" MIN. CLEARANCE BETWEEN SECONDARY POWER AND LOWEST POINT OF ANTENNA ASSEMBLY.
- Ⓑ – –NOT APPLICABLE– STEP POLE TOP EXTENSION AS PER DETAIL DWG.
- Ⓒ – –NOT APPLICABLE– 48" MIN CLEARANCE REQ'D.
- Ⓓ – 24" SPACING MAX.
- Ⓔ – 72" MIN. TO SECONDARY LEVEL.
- Ⓕ – –NOT APPLICABLE– 12" MIN. SPACING FOR EQUIP TO CURB.
- Ⓖ – 15' MIN. (MAY BE REDUCED TO 9' WHEN NOT EXPOSED TO TRAFFIC).
- Ⓗ – GROUND INSTALLED BY COMM COMPANY (INCLUDES 8' COPPER ROD).
- Ⓘ – 24" MIN. FROM CENTER OF POLE
- Ⓙ – 24" MIN. CLEARANCE REQ'D.
- Ⓚ – 7' MIN. / 8' MAX. REQ'D.
- Ⓛ – 4" MIN. CLEARANCE BETWEEN EQUIPMENT AND POLE.



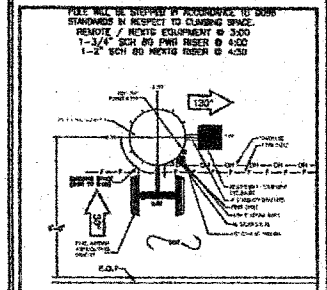
NEXTG TO PLACE NEW CL4 40' POLE

SCALE: N.T.S. | UTILITY POLE DETAIL POLE# NEW POLE | LOOKING NORTH | B



SCALE: N.T.S. | SITE POLE PICTURE | C

POLE WILL BE STEPPED IN ACCORDANCE TO GO95 STANDARDS IN RESPECT TO CLIMBING SPACE.
REMOTE / NEXTG EQUIPMENT @ 3:00
1-3/4" SCH 80 PWR RISER @ 4:00
1-2" SCH 80 NEXTG RISER @ 4:30



POLE# NEW POLE

SCALE: N.T.S. | RISER POLE DETAIL | D

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Call 811 Before you Dig!

NextG Networks Inc.
2216 O'TOOLE AVE.
SAN JOSE, CALIFORNIA 95131
PHONE: (408) 634-1500

PROJECT INFORMATION:
10600 SKYLINE BLVD.
OAKLAND, CA. 94610

CURRENT ISSUE DATE: 2/25/10

PERMIT SUBMISSION:

REV.	DATE:	DESCRIPTION:

PLANS PREPARED BY:
HP COMMUNICATIONS INC.
13341 Tahoma Lyn. Rd.
Corona, CA. 92880
PHONE: (951) 471-1919

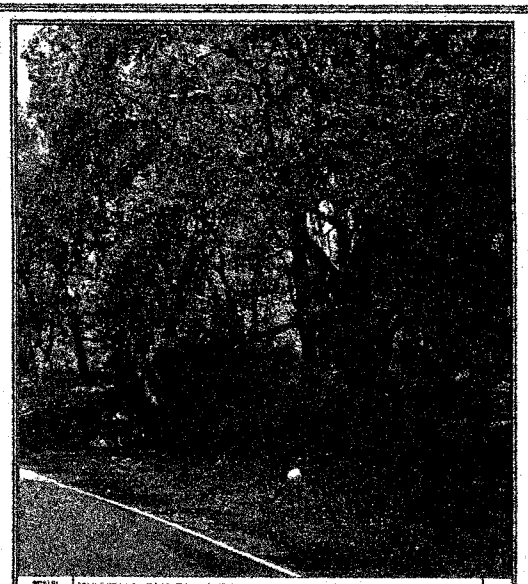
PLANS APPROVED BY:
NextG Networks Inc.
REP:

COMMENTS:

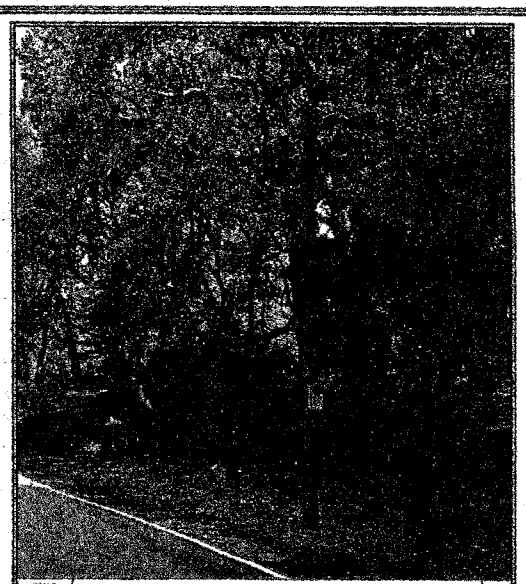
SHEET TITLE:
NEXTG NETWORKS
OAKLAND HILLS PROJECT
POLE PROFILE VRZ1013A-OHN30

SHEET NUMBER: 2 | REVISION: 2 OF 4

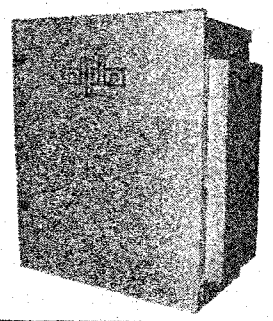
UTILITY NODE / REPEATER POLE EQUIPMENT PROFILES



SCALE: N.T.S. — EXISTING PHOTO / EQUIPMENT REPRESENTATION — E



SCALE: N.T.S. — PROPOSED PHOTO / EQUIPMENT REPRESENTATION — F

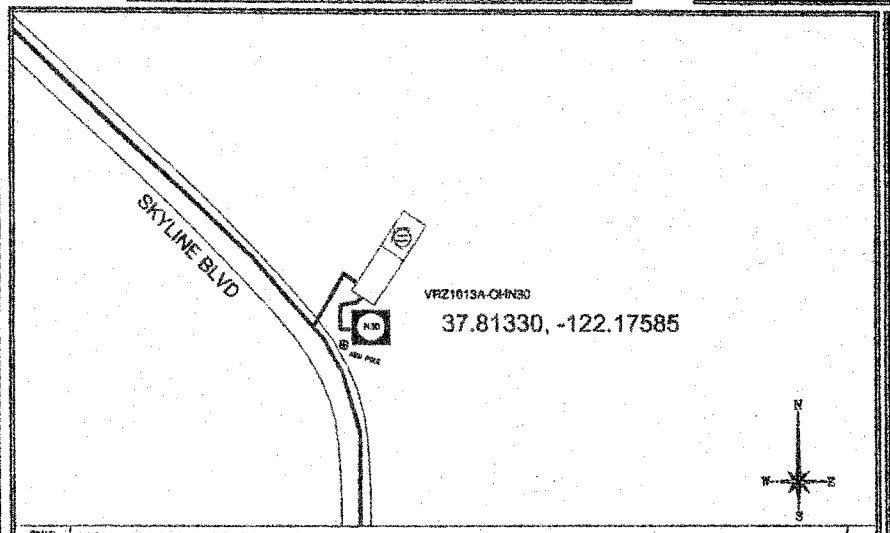


Dimensions	4 Battery	8 Battery
Width (in/mm):	24/610	31/788
Height (in/mm):	36/914	37/956
Depth (in/mm):	14/66	16/407
Weight (lb/kg)*:	350/158	812/368
Finish:	Powder coat white over aluminum	

* Weight dependent upon internal battery choice.

Note: The We enclosure is resistant to the harshest weather conditions including wind driven rain.
Backup time depends on load, battery, and operating temperature.
Optional DC Generator provides up to 100hrs backup

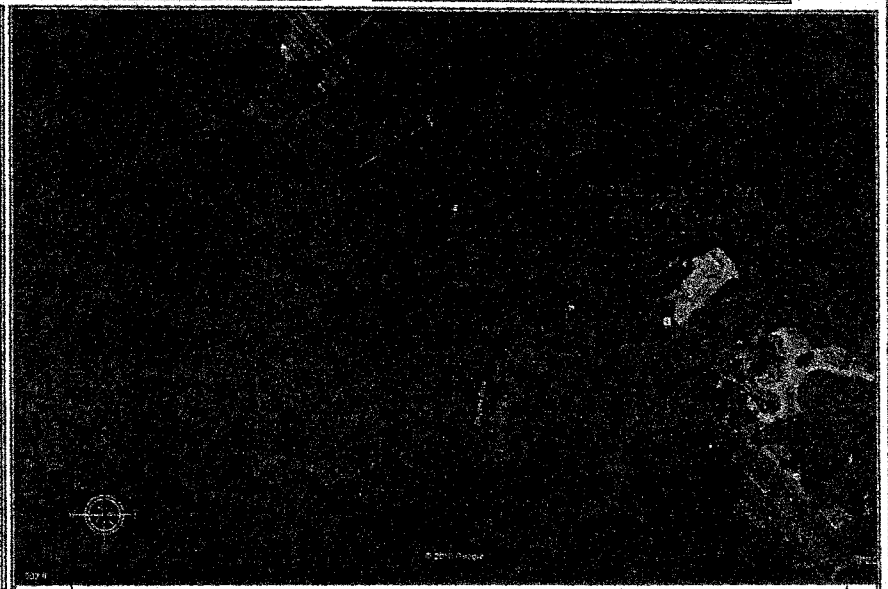
SCALE: N.T.S. — POWER SUPPLY ENCLOSURE — G



SCALE: N.T.S. — AERIAL STRAND OVERVIEW — H

LEGEND

POLE MOUNTED POWER SUPPLY | NODE LOCATION | FIBER OPTIC CABLE | .625PF COAXIAL CABLE | JOINT POLE | STREETLIGHT POLE



SCALE: N.T.S. — AERIAL/ POLE LOCATION REPRESENTATION — I

SYSTEM OVERVIEWS

NextG Networks Inc.
2215 O'TOOLE AVE.
SAN JOSE, CALIFORNIA 95131
PHONE: (408) 944-1200

PROJECT INFORMATION:
[illegible] BLVD.
OAKLAND, CA. 91649
(POWER SUPPLY LOCATION)

CURRENT ISSUE DATE:
2/25/10

PERMIT SUBMISSION:

REV.	DATE	DESCRIPTION	

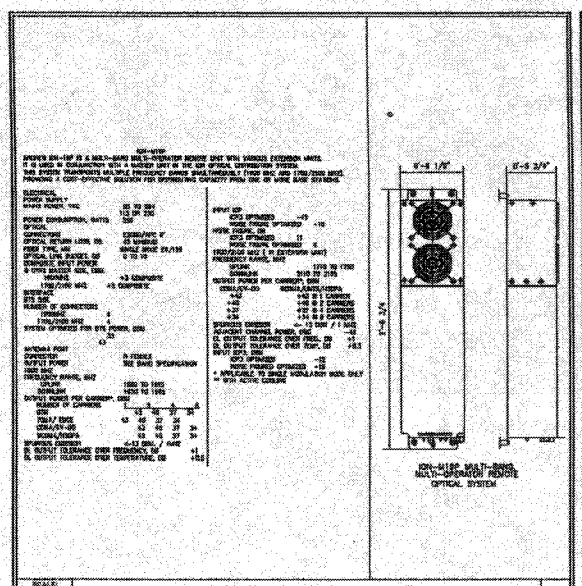
PLANS PREPARED BY:
HP COMMUNICATIONS INC.
12341 Newcastle Ave. Rd.
Glendale, CA 91607
PHONE: (818) 471-1219

PLANS APPROVED BY:
NextG Networks Inc.
REP:

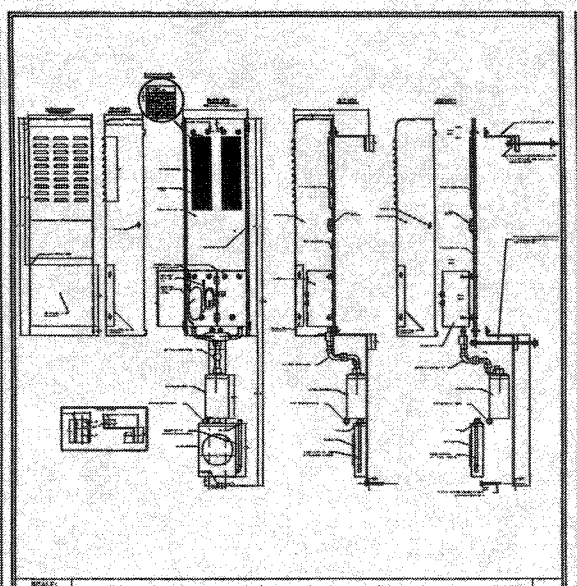
COMMENTS:

SHEET TITLE:
NEXTG NETWORKS
OAKLAND HILLS PROJECT
POLE PROFILE VRZ1613A-OHN30
(POWER SUPPLY LOCATION)

SHEET NUMBER: 3 — REVISION: 3 OF 4



SCALE: N.T.S. — REPEATER EQUIPMENT DIMENSIONS — J



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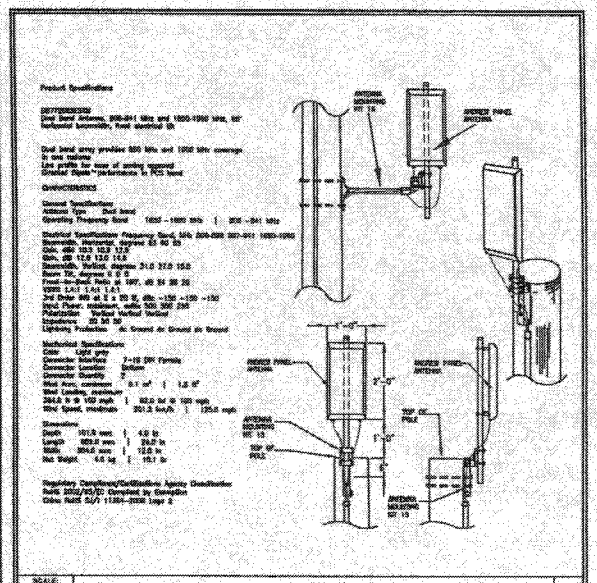
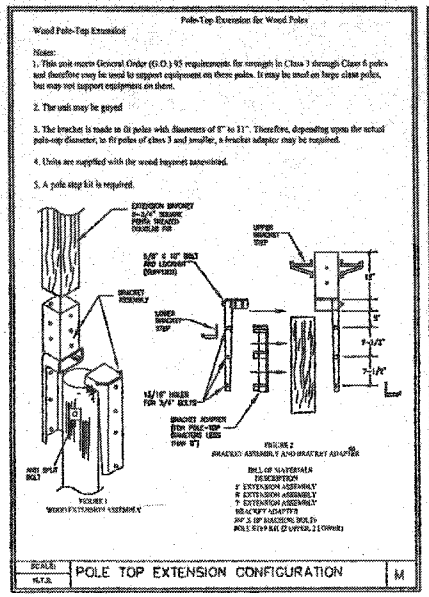
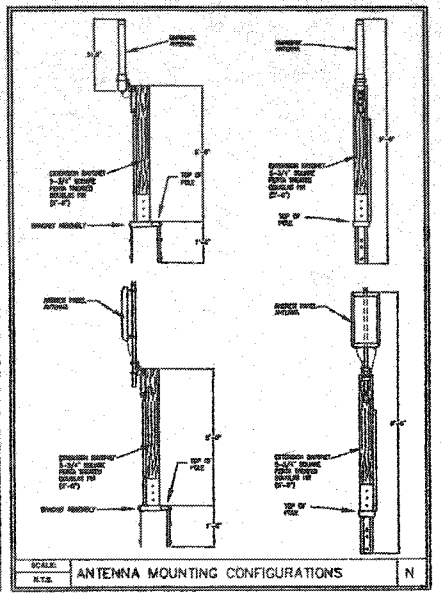


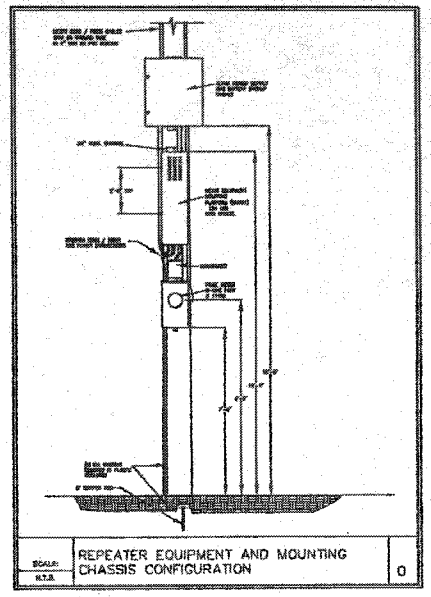
SCALE: N.T.S. — DIRECTIONAL ANTENNA SPECIFICATIONS — L



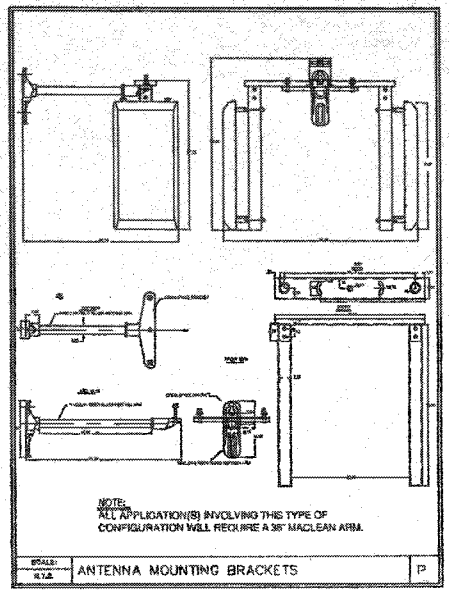
SCALE: N.T.S. — POLE TOP EXTENSION CONFIGURATION — M



SCALE: N.T.S. — ANTENNA MOUNTING CONFIGURATIONS — N



SCALE: N.T.S. — REPEATER EQUIPMENT AND MOUNTING CHASSIS CONFIGURATION — O



SCALE: N.T.S. — ANTENNA MOUNTING BRACKETS — P

UTILITY POLE EQUIPMENT TYPICALS

NextG Networks Inc.
3214 STEVE AVE.
SAN JOSE, CALIFORNIA 95131
PHONE: (408) 254-1585

PROJECT INFORMATION:
10000 SKYLINE BLVD.
OAKLAND, CA. 91589

CURRENT ISSUE DATE:
2/25/10

PERMIT SUBMISSION:

REV.	DATE:	DESCRIPTION:

PLANS PREPARED BY:
HP COMMUNICATIONS INC.
13341 Temescal Can. Rd.
Corona, CA 92883
PHONE: (951) 471-1919

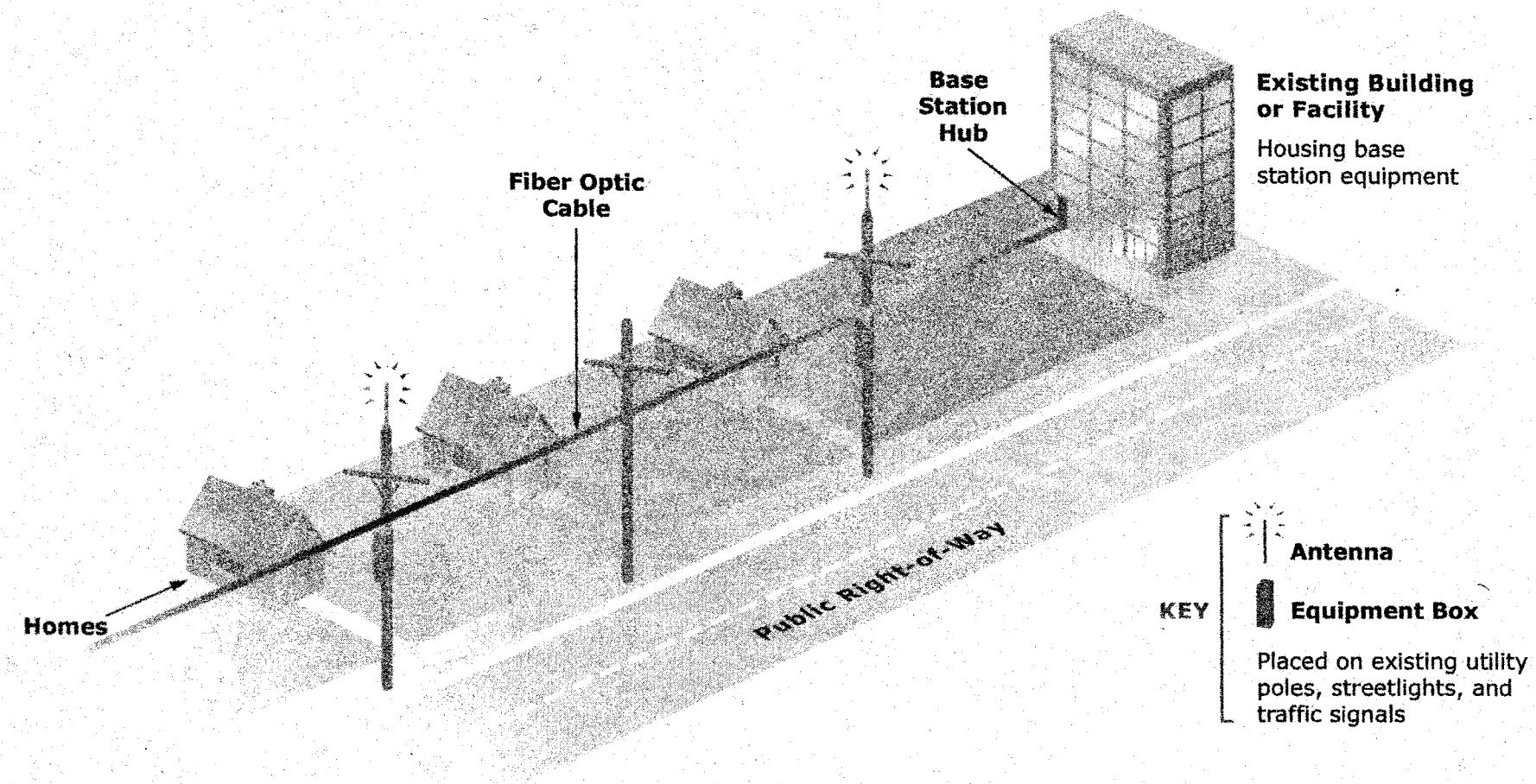
PLANS APPROVED BY:
NextG Networks Inc.

REP:

COMMENTS:

SHEET TITLE:
NEXTG NETWORKS
OAKLAND HILLS PROJECT
POLE PROFILE VRZ1013A-OHH38

SHEET NUMBER: 4 — REVISION: 4 OF 4


Base Station Hub
Existing Building or Facility
Housing base station equipment
Fiber Optic Cable
Homes
Public Right-of-Way
KEY
Antenna
Equipment Box
Placed on existing utility poles, streetlights, and traffic signals

Alternative Analysis

Project Address: **Public Right-of-way at approximately 10000 Skyline Boulevard**

From the Oakland City Municipal Code 17.128.120, NextG reviewed each of the criteria listed for alternative analysis.

New wireless facilities shall generally be designed in the following order of preference:

A. Building or structure mounted antennas completely concealed from view.
- Not Applicable. The NextG design proposes to install a new wood utility pole in the Public right-of-way and does not propose to attach to buildings. The wood pole can not be concealed from view.

B. Building or structure mounted antennas set back from roof edge, not visible from public right-of way.
- Not Applicable. The NextG design does not include roof tops and utilizes the public right-of-way almost exclusively.

C. Building or structure mounted antennas below roof line (façade mount, pole mount) visible from public right-of-way, painted to match existing structure.
- Not Applicable. The NextG design does not include buildings or structures in its deployment.

D. Building or structure mounted antennas above roof line visible from public right-of-way.
- Not Applicable. The NextG design does not include buildings or structures in its deployment.

E. Monopoles.
- We need to install a new wood utility pole. City of Oakland Planning defines our installation a Monopole, however, there are none in the PROW where we need coverage and the traditional "monopole" does not fit our business model which only allows for attachment to utility poles.

F. Towers.
- We need to install a new wood utility pole. Our proposed design is defined as a "monopole" by the City of Oakland Planning department. NextG's business model only allows for attachment to utility poles in the PROW. There are no Towers that fit our business model or are in the PROW.

JERROLD T. BUSHBERG Ph.D., DABMP, DABSNM
♦HEALTH AND MEDICAL PHYSICS CONSULTING♦

7784 Oak Bay Circle Sacramento, CA 95831
(800) 760-8414–jbushberg@hampc.com

Christopher D. Hourigan
NextG Networks
2216 O'Toole Ave
San Jose CA 95131

May 20, 2010

Introduction

At your request, I have reviewed the technical specifications and calculated the maximum radiofrequency, (RF), power density from four proposed NextG nodes to be located in the public right-of-way near the intersection of 7294 Marlboro Terrace/4949 Grizzly Peak Blvd, Berkeley, CA (Node 25) and at 9950; 10000; 10648 Skyline Blvd., Oakland, CA (Nodes 29-31). These nodes will be used for Verizon Wireless (VW) telecommunications wireless transmission and reception utilizing two (2) Andrew antennae model # DB772G65ESXM mounted with their the face of the antennae are separated by 120 to 160 degrees. The antenna used in this network is directional and is designed to transmit with a maximum input power of up to 5.7 watts, with a gain of 10.5 dBd, within a bandwidth between approximately 880 and 890 MHz, and up to 5.7 watts, with a gain of 12.5 dBd, and within a bandwidth between approximately 1,850 and 1,990 MHz. The distance from the antenna center to the ground is at least 32 feet. An example of the site configuration is shown in attachment one. The antenna specification details are depicted in attachment two. This analysis represent the worst case of any of the proposed nodes.

Calculation Methodology

Calculations at the level of the antenna were made in accordance with the cylindrical model recommendations for near-field analysis contained in the Federal Communications Commission, Office of Engineering and Technology Bulletin 65 (OET 65) entitled "Evaluating Compliance with FCC-Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields." RF exposure calculations at ground level were made using equation 10 from the same OET document. Several assumptions were made in order to provide the most conservative or "worse case" projections of power densities. Calculations were made assuming that all channels were operating simultaneously at their maximum design effective radiated power. Attenuation (weakening) of the signal that would result from surrounding foliage or buildings was ignored. Buildings or other structures can reduce the signal strength by a factor of 10 (i.e., 10 dB) or more depending upon the construction material. In addition, for ground level calculations, the ground or other surfaces were considered to be perfect reflectors (which they are not) and the RF energy was assumed to overlap and interact constructively at all locations (which they would not) thereby resulting in the calculation of the maximum potential exposure. In fact, the accumulations of all these very conservative assumptions, will significantly overestimate the actual exposures that would typically be expected from such a facility. However, this method is a prudent approach that errs on the side of safety.

RF Safety Standards

The two most widely recognized standards for protection against RF field exposure are those published by the American National Standards Institute (ANSI) C95.1 and the National Council on Radiation Protection and measurement (NCRP) report #86.

The NCRP is a private, congressionally chartered institution with the charge to provide expert analysis of a variety of issues (especially health and safety recommendations) on radiations of all forms. The scientific analyses of the NCRP are held in high esteem in the scientific and regulatory community both nationally and internationally. In fact, the vast majority of the radiological health regulations currently in existence can trace their origin, in some way, to the recommendations of the NCRP.

All RF exposure standards are frequency-specific, in recognition of the differential absorption of RF energy as a function of frequency. The most restrictive exposure levels in the standards are associated with those frequencies that are most readily absorbed in humans. Maximum absorption occurs at approximately 80 MHz in adults. The NCRP maximum allowable continuous occupational exposure at this frequency is 1,000 $\mu W/cm^2$. This compares to 5,000 $\mu W/cm^2$ at the most restrictive of the PCS frequencies (~1,800 MHz) that are absorbed much less efficiently than exposures in the VHF TV band.

The traditional NCRP philosophy of providing a higher standard of protection for members of the general population compared to occupationally exposed individuals, prompted a two-tiered safety standard by which levels of allowable exposure were substantially reduced for "uncontrolled " (e.g., public) and continuous exposures. This measure was taken to account for the fact that workers in an industrial environment are typically exposed no more than eight hours a day while members of the general population in proximity to a source of RF radiation may be exposed continuously. This additional protection factor also provides a greater margin of safety for children, the infirmed, aged, or others who might be more sensitive to RF exposure. After several years of evaluating the national and international scientific and biomedical literature, the members of the NCRP scientific committee selected 931 publications in the peer-reviewed scientific literature on which to base their recommendations. The current NCRP recommendations limit continuous public exposure at PCS frequencies to 1,000 $\mu W/cm^2$.

The 1992 ANSI standard was developed by Scientific Coordinating Committee 28 (SCC 28) under the auspices of the Institute of Electrical and Electronic Engineers (IEEE). This standard, entitled "IEEE Standards for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz" (IEEE C95.1-1991), was issued in April 1992 and subsequently adopted by ANSI. A complete revision of this standard (C95.1-2005) was completed in October 2005 by SCC 39 the IEEE International Committee on Electromagnetic Safety. The current version, including minor revisions, was published in March 2010. Their recommendations are similar to the NCRP recommendation for the maximum permissible exposure (MPE) to the public PCS frequencies (950 $\mu W/cm^2$ for continuous exposure at 1,900 MHz) and incorporates the convention of providing for a greater margin of safety for public as compared with occupational exposure. Higher whole body exposures are allowed for brief periods provided that no 30 minute time-weighted average exposure exceeds these aforementioned limits.

On August 9, 1996, the Federal Communications Commission (FCC) established a RF exposure standard that is a hybrid of the current ANSI and NCRP standards. The maximum permissible exposure values used to assess environmental exposures are those of the NCRP (i.e., maximum public continuous exposure at PCS frequencies of 1,000 $\mu W/cm^2$). The FCC issued these standards in order to address its responsibilities under

the National Environmental Policy Act (NEPA) to consider whether its actions will "significantly affect the quality of the human environment." In as far as there was no other standard issued by a federal agency such as the Environmental Protection Agency (EPA), the FCC utilized their rulemaking procedure to consider which standards should be adopted. The FCC received thousands of pages of comments over a three-year review period from a variety of sources including the public, academia, federal health and safety agencies (e.g., EPA & FDA) and the telecommunications industry. The FCC gave special consideration to the recommendations by the federal health agencies because of their special responsibility for protecting the public health and safety. In fact, the maximum permissible exposure (MPE) values in the FCC standard are those recommended by EPA and FDA. The FCC standard incorporates various elements of the 1992 ANSI and NCRP standards which were chosen because they are widely accepted and technically supportable. There are a variety of other exposure guidelines and standards set by other national and international organizations and governments, most of which are similar to the current ANSI/IEEE or NCRP standard, figure one.

The FCC standards "Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation" (Report and Order FCC 96-326) adopted the ANSI/IEEE definitions for controlled and uncontrolled environments. In order to use the higher exposure levels associated with a controlled environment, RF exposures must be occupationally related (e.g., PCS company RF technicians) and they must be aware of and have sufficient knowledge to control their exposure. All other environmental areas are considered uncontrolled (e.g., public) for which the stricter (i.e., lower) environmental exposure limits apply. All carriers were required to be in compliance with the new FCC RF exposure standards for new telecommunications facilities by October 15, 1997. These standards applied retroactively for existing telecommunications facilities on September 1, 2000.

The task for the physical, biological, and medical scientists that evaluate health implications of the RF data base has been to identify those RF field conditions that can produce harmful biological effects. No panel of experts can guarantee safe levels of exposure because safety is a null concept, and negatives are not susceptible to proof. What a dispassionate scientific assessment can offer is the presumption of safety when RF-field conditions do not give rise to a demonstrable harmful effect.

Summary & Conclusions

All NextG antenna systems operating with the characteristics as specified above and observing a 3 foot public exclusion zone directly in front of and at the same elevation as the antenna, will be in full compliance with FCC RF public and occupational safety exposure standards. These transmitters, by design and operation, are low-power devices. Even under maximal exposure conditions in which all the channels are operating at full power, the maximum exposure next to and at the elevation of the antenna will not result in RF exposures in excess of 51% of the FCC occupational RF safety standard for these frequencies, (see appendix A-1). At three feet or more directly in front and at the same elevation of the antenna, the maximum RF exposure will not exceed the FCC public RF safety standard. An information sign, as depicted in appendix A-2, containing appropriate contact information and indicating that RF exposures at 3 feet or closer to the face of the antenna may exceed the FCC public exposure standard and thus only qualified RF workers may work in this 3 foot exclusion zone, should be placed near the antenna. The maximum RF exposure at ground levels will not be in excess of 0.7% of the FCC public safety standard, (see appendix A-3). A chart of the electromagnetic spectrum and a comparison of RF power densities from various common sources is presented in figures two and three respectively in order to place exposures from wireless telecommunications systems in perspective.

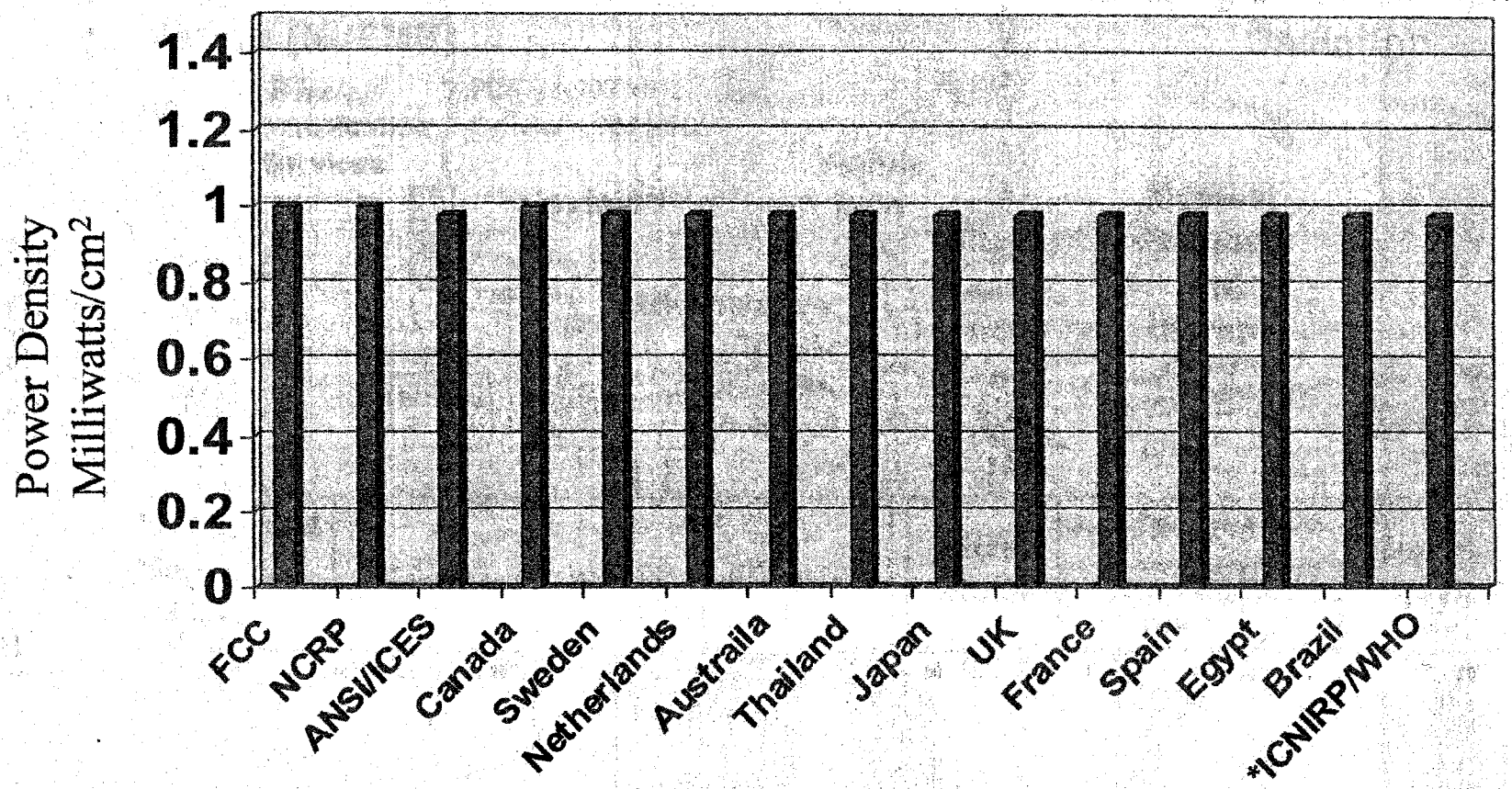
Given the low levels of radiofrequency fields that would be generated from all NextG directional antenna installations of this configuration, (e.g., antenna specification and input power); where the center of the antenna is 32 or more feet above grade, and the three foot public exclusion zone directly in front and at the same elevation as the antenna are observed, there is no scientific basis to conclude that harmful effects will attend the utilization of these proposed wireless telecommunications facilities. This conclusion is supported by a large numbers of scientists that have participated in standard-setting activities in the United States who are overwhelmingly agreed that RF radiation exposure below the FCC exposure limits has no demonstrably harmful effects on humans. These findings are based on my professional evaluation of the scientific issues related to the health and safety of non-ionizing electromagnetic radiation and my analysis of the technical specification as provided by NextG Networks. The opinions expressed herein are based on my professional judgement and are not intended to necessarily represent the views of any other organization or institution. Please contact me if you require any additional information.

Sincerely,

Jerrold T. Bushberg Ph.D., DABMP, DABSNM
Diplomate, American Board of Medical Physics (DABMP)
Diplomate, American Board of Science in Nuclear Medicine (DABSNM)

Enclosures: Figures 1-3; Attachment 1,2; Appendix A-1, A-2, A-3 and Statement of Experience.

National and International Public RF Exposure Standards (PCS @ 1,950 MHz)



***International Commission on Non-Ionizing Radiation Protection (ICNIRP) Public Safety Exposure Standard. ICNIRP standard recommended by the World Health Organization (WHO). Members of the ICNIRP Scientific Committee were from:**

- **Australia**
- **Finland**
- **France**
- **Germany**
- **Hungary**
- **Italy**
- **Sweden**
- **Japan**
- **United Kingdom**
- **United States**

Figure 1

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Typical Exposure from Various Radio Frequency / Microwave Sources

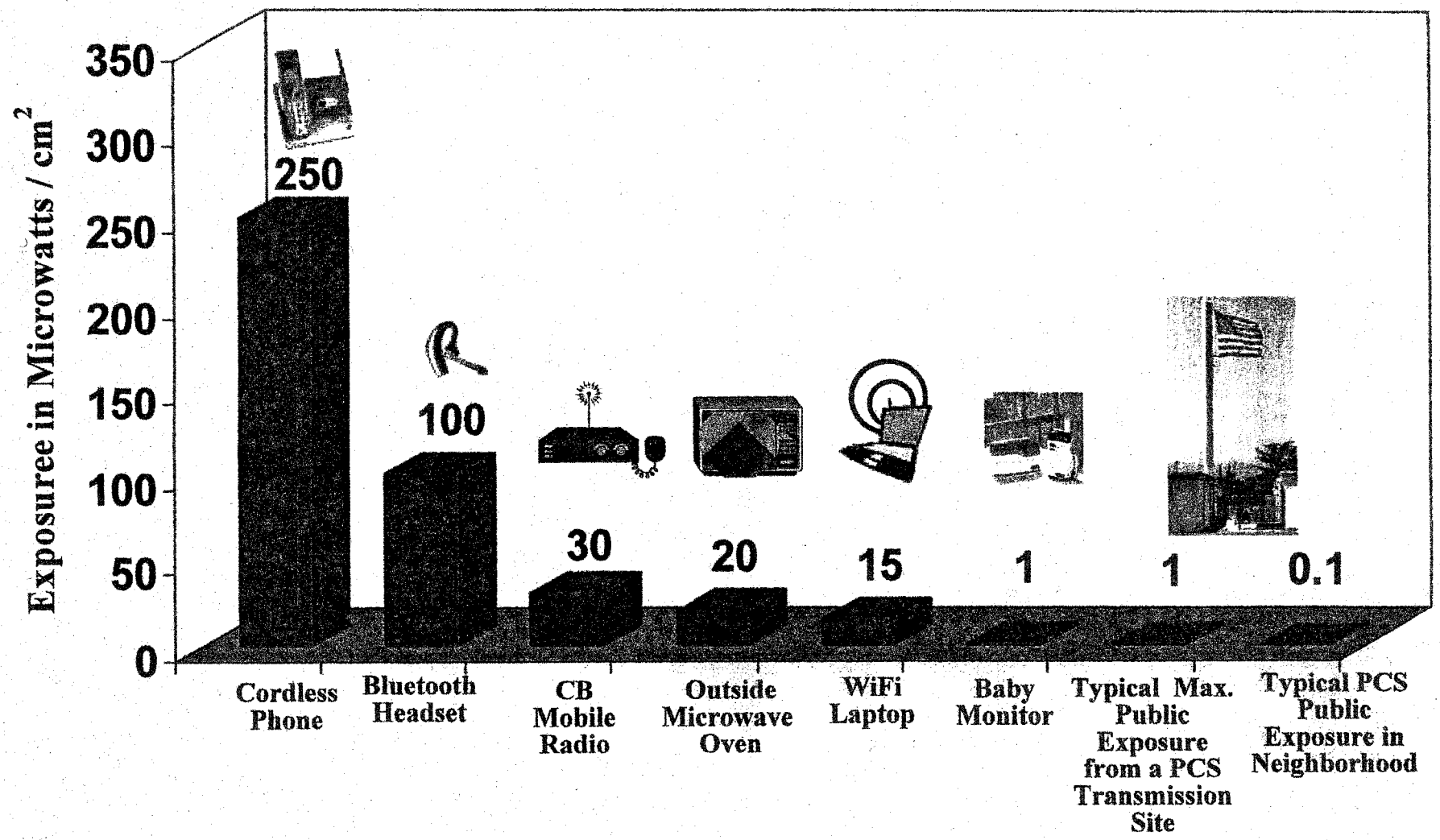

Figure 3

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Attachment 1

Wood Pole Mounted Antennae

NextG Networks Inc.

OAKLAND HILLS
VRZ1013A-OHN30
10000 SKYLINE BLVD.
OAKLAND, CA. 91649

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE AREAS GOVERNING CODES.

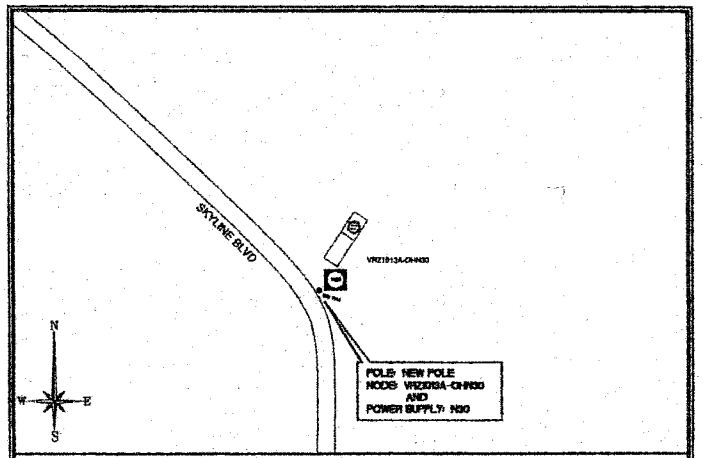
1. STATE ADMINISTRATIVE CODE
2. STATE BUILDING CODE
3. ANSI/EIA-222-F LIFE SAFETY CODE NFPA-101-1988
4. STATE MECHANICAL CODE
5. STATE PLUMBING CODE
6. STATE ELECTRIC CODE
7. LOCAL BUILDING CODE
8. CITY/COUNTY ORDINANCES

CODE COMPLIANCE

PROPERTY INFORMATION

CUSTOMER:	NEXTG
PROJECT:	OAKLAND HILLS
NODE:	VRZ1013A-OHN30
LATITUDE:	37.81330
LONGITUDE:	-122.17588
STREET ADDRESS:	10000 SKYLINE BLVD.
CITY, STATE:	OAKLAND, CA 91649
POLE# :	NEW POLE
POLE TYPE:	WOOD UTILITY POLE
RAD CENTER / ANTENNA HEIGHT:	32'-0"
ANTENNA TYPE:	DB772D65E3XM
AZIMUTH FOR ANTENNA:	155' AND 295'
POWER TO POLE:	METERED AT NODE
POLE ACCESS:	STREET ACCESS
POLE OWNER:	N/A
POLE LOCATION & DESCRIPTION:	10000 SKYLINE BLVD.

PROJECT SUMMARY



VICINITY MAP

THE PROJECT CONSISTS OF THE INSTALLATION AND OPERATION OF ANTENNAS AND ASSOCIATED EQUIPMENT CABINETS FOR NEXTG. THE INSTALLATION OF GROUND MOUNTED EQUIPMENT CABINETS, ANTENNAS ON AN EXISTING STREET LIGHT, WOOD POLE, TRAFFIC SIGNAL AND NEW STEEL POLES.

PROJECT DESCRIPTION

INSTALL / PLACE NEW FIBER TO NEW OR EXISTING POLE. INSTALL EITHER OMNI OR PANEL ANTENNAS AND ALL ASSOCIATED BRACKETS IN ACCORDANCE TO CONSTRUCTION SPECIFICATIONS. REARRANGE ANY EXISTING FACILITIES IN ACCORDANCE TO GOVERNING CONSTRUCTION GUIDELINES.

PROJECT SCOPE

Call Before you Dig!

811

Know what's below.
Call before you dig.
Call 811 Before you Dig!

SHEET	DESCRIPTION	REV.
1	TITLE SHEET	0
2	UTILITY NODE / REPEATER POLE EQUIPMENT PROFILES	0
3	SYSTEM OVERVIEWS	0
4	UTILITY POLE EQUIPMENT TYPICALS	0
		0
		0
		0

SHEET INDEX

DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

GENERAL CONTRACTOR NOTES

NextG Networks Inc.
2214 O'TOOLE AVE.
SAN JOSE, CALIFORNIA 95131
PHONE: (408) 954-1580

PROJECT INFORMATION:
10000 SKYLINE BLVD.
OAKLAND, CA. 91649

CURRENT ISSUE DATE: 2/25/10

PERMIT SUBMISSION:

REV.	DATE	DESCRIPTION	

PLANS PREPARED BY:
HP COMMUNICATIONS INC.
13341 Tyeemanol Dyr. Rd.
Corona, CA. 92883
PHONE: (951) 479-1919

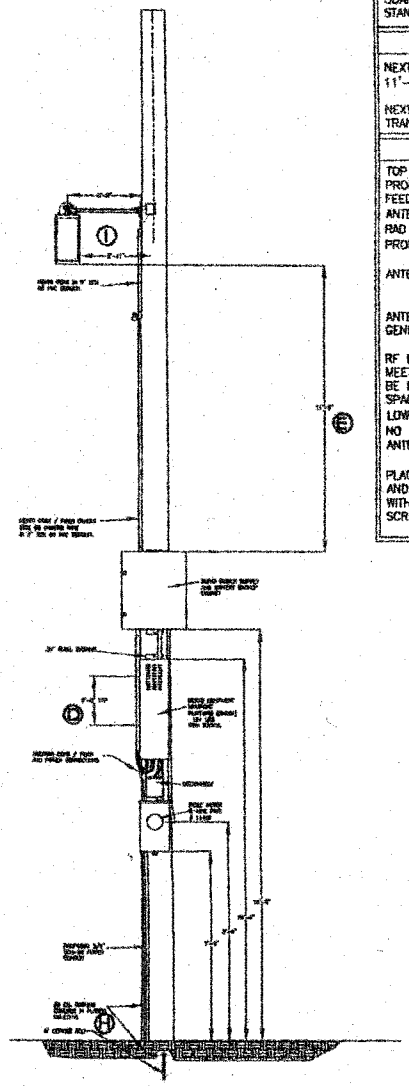
PLANS APPROVED BY:
NextG Networks Inc.
REP.:

COMMENTS:

SHEET TITLE:
NEXTG NETWORKS
OAKLAND HILLS PROJECT
POLE PROFILE VRZ1013A-OHN30

SHEET NUMBER: 1
REVISION:
1 OF 4

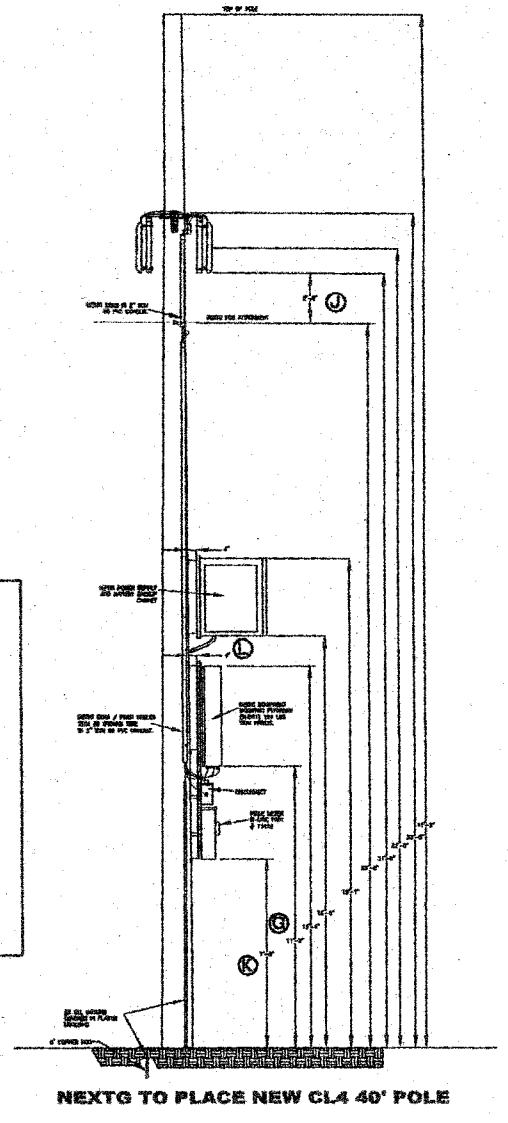
MAKE READY
QUARTER STEP POLE ACCORDING TO GO95 STANDARDS
NEW CONSTRUCTION
NEXTG TO INSTALL SHROUD KIT SH001 @ 11'-3" AGL NEXTG TO PLACE NEW METAL POLE AND TRANSFER ALL SIGNAGE.
NOTES:
TOP OF POLE: 41'-5" PROPOSED SECONDARY: UNDERGROUND FEED. ANTENNA KIT H.O.A: 33'-5" RAD CENTER OF ANTENNA: 32'-0" PROPOSED NEXTG H.O.A: 29'-0" ANTENNA TYPE: 12"X24" ANDREW DIRECTIONAL ANTENNA(S). ANTENNA OUTPUT DOES NOT EXCEED GENERAL POPULATION EXPOSURE LIMITS. RF EMISSION PLACARDS / SIGNAGE MEETING THE FCC REQUIREMENTS SHALL BE IN A LOCATION VISIBLE FROM CLIMBING SPACE AND BE AFFIXED TO THE POLE NO LOWER THAN 9'-0" ABOVE GROUND LINE & NO HIGHER THAN 3'-0" BELOW THE ANTENNA. PLACARDS / SIGNAGE ARE UVA RESISTANT AND SHALL BE ATTACHED TO THE POLE WITH GALVANIZED NAILS OR GALVANIZED SCREWS.



NEXTG TO PLACE NEW CL4 40' POLE

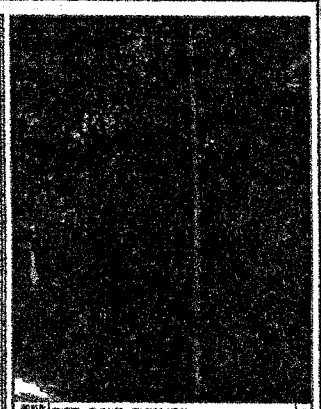
SCALE: N.T.S.	UTILITY POLE DETAIL	POLE# NEW POLE	LOOKING WEST	A

- (A) - 48" MIN. CLEARANCE BETWEEN SECONDARY POWER AND LOWEST POINT OF ANTENNA ASSEMBLY.
- (B) - STEP POLE TOP EXTENSION AS PER DETAIL DWG.
- (C) - 48" MIN CLEARANCE REQ'D.
- (D) - 24" SPACING MAX.
- (E) - 72" MIN. TO SECONDARY LEVEL.
- (F) - 12" MIN. SPACING FOR EQUIP TO CURB.
- (G) - 15' MIN. (MAY BE REDUCED TO 9' WHEN NOT EXPOSED TO TRAFFIC).
- (H) - GROUND INSTALLED BY COMM COMPANY (INCLUDES 8' COPPER ROD).
- (I) - 24" MIN. FROM CENTER OF POLE
- (J) - 24" MIN. CLEARANCE REQ'D.
- (K) - 7' MIN. / 8' MAX. REQ'D.
- (L) - 4" MIN. CLEARANCE BETWEEN EQUIPMENT AND POLE.



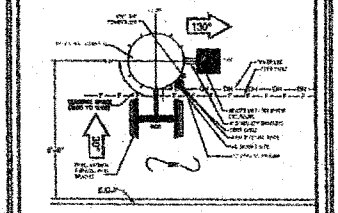
NEXTG TO PLACE NEW CL4 40' POLE

SCALE: N.T.S.	UTILITY POLE DETAIL	POLE# NEW POLE	LOOKING NORTH	B



SCALE: N.T.S.	SITE POLE PICTURE	C

POLE WILL BE SUPPLIED IN ACCORDANCE TO GO95 STANDARDS IN RESPECT TO CLIMBING SPACE.
REMOTE / NEXTG EQUIPMENT @ 3:00
1-3/4" SCH 80 PWR RISER @ 4:00
1-2" SCH 80 NEXTG RISER @ 4:30



	POLE# NEW POLE	
SCALE: N.T.S.	RISER POLE DETAIL	D

Call Before you Dig!

811

Know what's below.
Call before you dig.
Call 811 Before you Dig!

UTILITY NODE / REPEATER POLE EQUIPMENT PROFILES

NextG Networks Inc.
2216 O'BRIEN RD.
SAN JOSE, CALIFORNIA 95131
PHONE: (408) 954-1700

PROJECT INFORMATION:
OAKLAND, CA 94608

CURRENT ISSUE DATE:
2/25/10

PERMIT SUBMISSION:

REV.	DATE	DESCRIPTION

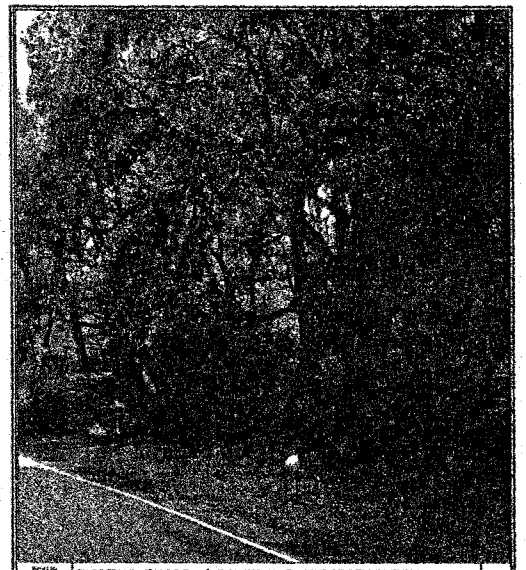
PLANS PREPARED BY:
HP COMMUNICATIONS INC.
13245 Tamarack Dr. Rd.
Corona, CA 92883
PHONE: (951) 471-1919

PLANS APPROVED BY:
NextG Networks Inc.
REP.:

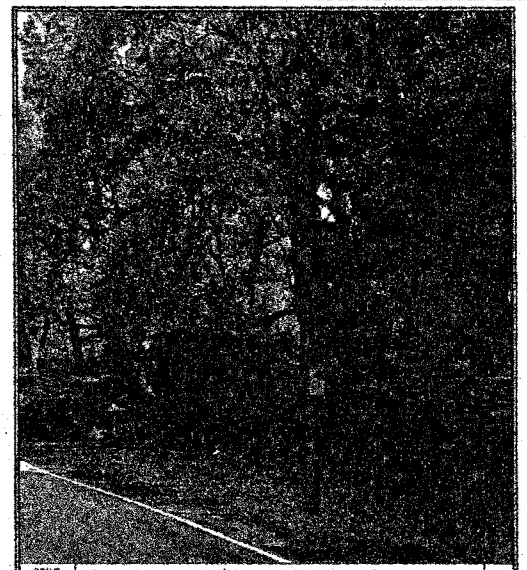
COMMENTS:

SHEET TITLE:
NEXTG NETWORKS
OAKLAND HILLS PROJECT
POLE PROFILE VAS1013B-ON030

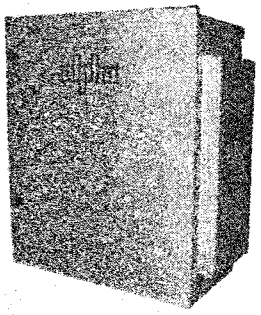
SHEET NUMBER: 2 | REVISION: 2 OF 4



SCALE N.T.S. EXISTING PHOTO / EQUIPMENT REPRESENTATION E



SCALE N.T.S. PROPOSED PHOTO / EQUIPMENT REPRESENTATION F

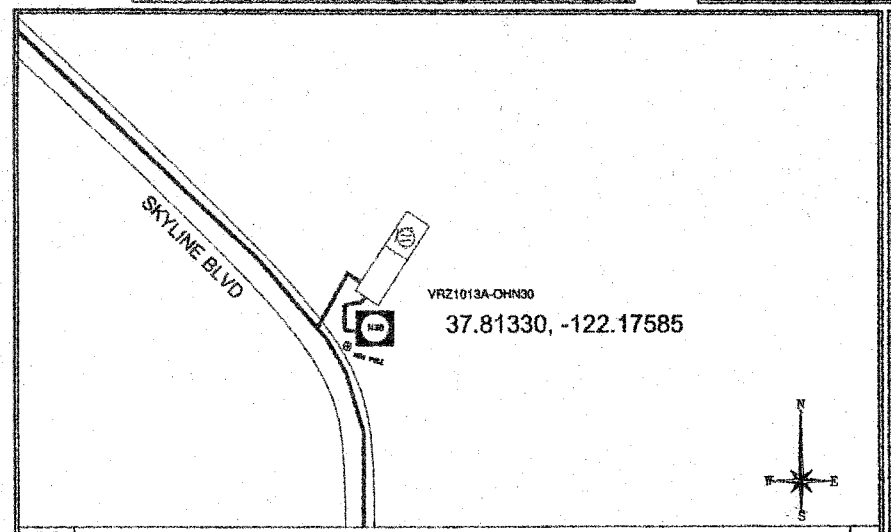


Dimensions	4 Battery	8 Battery
Width (in/mm):	24/610	31/788
Height (in/mm):	36/914	37/939
Depth (in/mm):	14/355	16/407
Weight (lb/kg)*:	350/158	812/368
Finish:	Powder coat white over aluminum	

* Weight dependent upon internal battery chrome.

Note: The W3 enclosure is resistant to the harshest weather conditions including wind driven rain.
Backup time depends on load, battery, and operating temperature.
Optional DC Generator provides up to 100hrs backup.

SCALE N.T.S. POWER SUPPLY ENCLOSURE G



SCALE N.T.S. AERIAL STRAND OVERVIEW H

LEGEND

POLE MOUNTED POWER SUPPLY | NODE LOCATION | FIBER OPTIC CABLE | .625PF COAXIAL CABLE | JOINT POLE | STREETLIGHT POLE

SCALE N.T.S. AERIAL/ POLE LOCATION REPRESENTATION I

SYSTEM OVERVIEWS

NextG Networks Inc.
3214 O'TOOLE AVE.
SAN JOSE, CALIFORNIA 95131
PHONE: (408) 954-1580

PROJECT INFORMATION:

NEXTG NETWORKS
OAKLAND HILLS PROJECT
POLE PROFILE VRZ1013A-OHN30
(POWER SUPPLY LOCATION)

CURRENT ISSUE DATE: 2/25/10

PERMIT SUBMISSION:

REV.	DATE	DESCRIPTION	BY

PLANS PREPARED BY:

HP COMMUNICATIONS INC.
13241 Tomasel Cyn. Rd.
Saticoy, CA. 93063
PHONE: (661) 471-1919

PLANS APPROVED BY:

NextG Networks Inc.

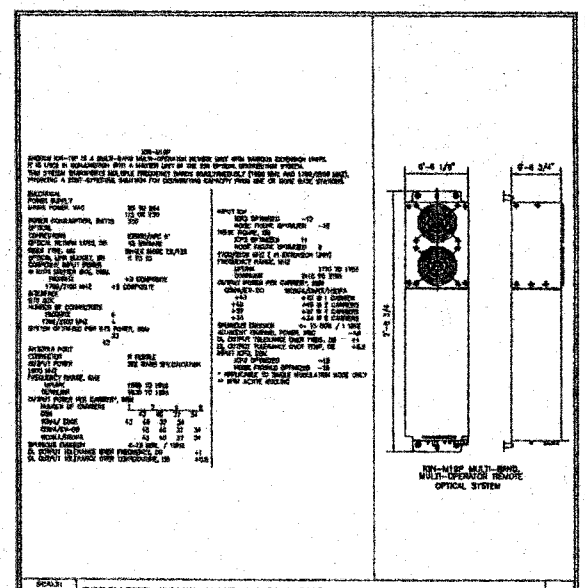
REP:

COMMENTS:

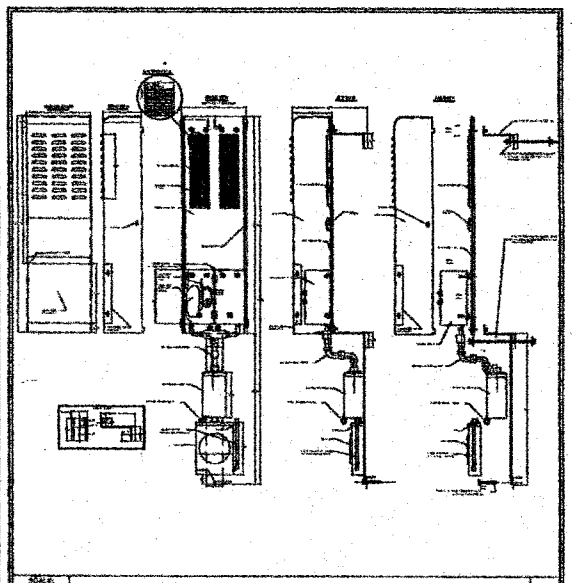
SHEET TITLE:

NEXTG NETWORKS
OAKLAND HILLS PROJECT
POLE PROFILE VRZ1013A-OHN30
(POWER SUPPLY LOCATION)

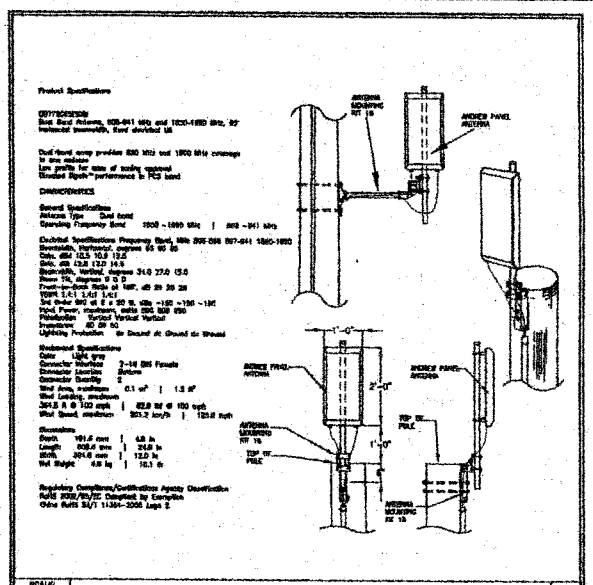
SHEET NUMBER: 3 | REVISION: 3 OF 4



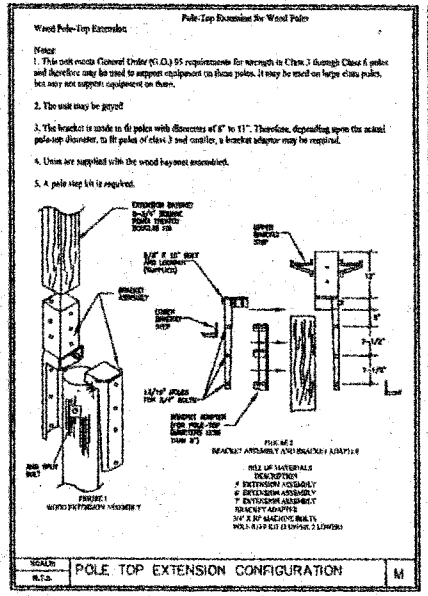
SCALE: N.T.S. | REPEATER EQUIPMENT DIMENSIONS | J



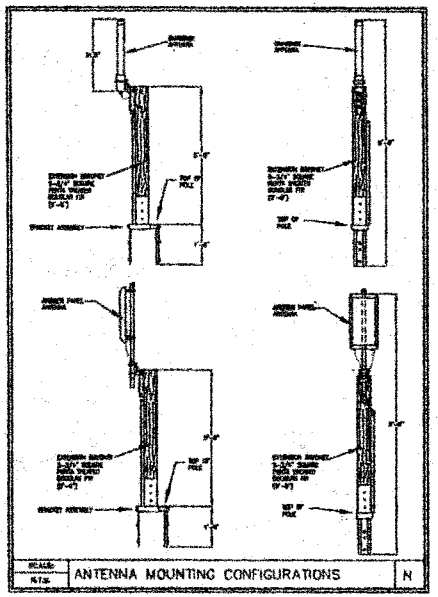
SCALE: N.T.S. | SHROUD SPECIFICATIONS (SH007) | K



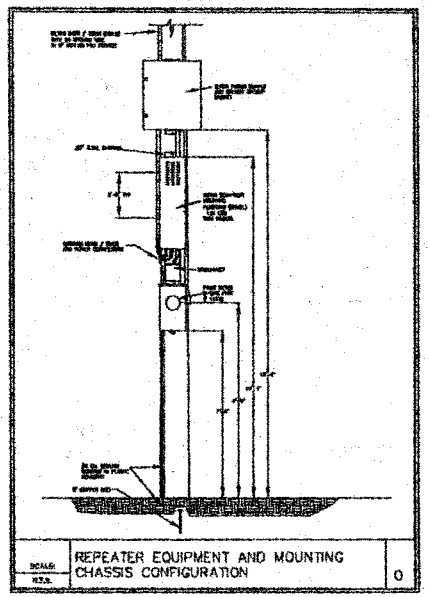
SCALE: N.T.S. | DIRECTIONAL ANTENNA SPECIFICATIONS | L



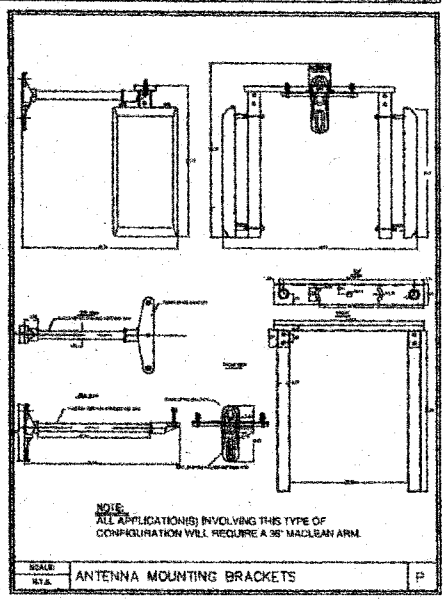
SCALE: N.T.S. | POLE TOP EXTENSION CONFIGURATION | M



SCALE: N.T.S. | ANTENNA MOUNTING CONFIGURATIONS | N



SCALE: N.T.S. | REPEATER EQUIPMENT AND MOUNTING CHASSIS CONFIGURATION | O



SCALE: N.T.S. | ANTENNA MOUNTING BRACKETS | P

UTILITY POLE EQUIPMENT TYPICALS

NextG Networks Inc.
2216 O'TOOLE INC.
SAN JOSE, CALIFORNIA 95131
PHONE: (408) 934-1980

PROJECT INFORMATION:
14200 SKYLINE BLVD.
OAKLAND, CA. 94619

CURRENT ISSUE DATE:
2/25/10

PERMIT SUBMISSION:

REV.	DATE	DESCRIPTION

PLANS PREPARED BY:
HP COMMUNICATIONS INC.
15241 Yorkwood Cir. Rd.
Corona, CA. 92883
PHONE: (951) 471-1918

PLANS APPROVED BY:
NextG Networks Inc.

REP.:

COMMENTS:

SHEET TITLE:
NEXTG NETWORKS
OAKLAND HILLS PROJECT
POLE PROPOSE VRZ14013A-OHH36

SHEET NUMBER: 4 | REVISION: | 4 OF 4

Attachment 2

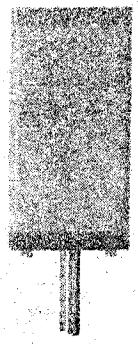
Antenna Specifications

Product Specifications

ANDREW.
A CommScope Company

DB772G65ESXM

Dual Band Antenna, 806–941 MHz and 1850–1990 MHz, 65° horizontal beamwidth, fixed electrical tilt



- Dual band array provides 850 MHz and 1900 MHz coverage in one radome
- Low profile for ease of zoning approval
- Directed Dipole™ performance in PCS band

CHARACTERISTICS

General Specifications

Antenna Type	Dual band
Operating Frequency Band	1850 – 1990 MHz | 806 – 941 MHz

Electrical Specifications

Frequency Band, MHz	806–896	897–941	1850–1990
Beamwidth, Horizontal, degrees	63	60	65
Gain, dBd	10.5	10.9	12.5
Gain, dBi	12.6	13.0	14.6
Beamwidth, Vertical, degrees	31.0	27.0	15.0
Beam Tilt, degrees	0	0	0
Front-to-Back Ratio at 180°, dB	24	28	20
VSWR	1.4:1	1.4:1	1.4:1
3rd Order IMD at 2 x 20 W, dBc	-150	-150	-150
Input Power, maximum, watts	500	500	250
Polarization	Vertical	Vertical	Vertical
Impedance	50	50	50
Lightning Protection	dc Ground	dc Ground	dc Ground

From North America, toll free
Telephone: 1-800-255-1479
Fax: 1-800-349-5444

Outside North America
Telephone: +1-708-873-2307
Fax: +1-779-435-8579

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All specifications are subject to change. Please see www.andrew.com for the most current information.

Product Specifications

ANDREW.
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Mechanical Specifications

Color	Light gray
Connector Interface	7-16 DIN Female
Connector Location	Bottom
Connector Quantity	2
Wind Area, maximum	0.1 m^2 | 1.5 ft^2
Wind Loading, maximum	364.8 N @ 100 mph | 82.0 lbf @ 100 mph
Wind Speed, maximum	201.2 km/h | 125.0 mph

Dimensions

Depth	101.6 mm | 4.0 in
Length	609.6 mm | 24.0 in
Width	304.8 mm | 12.0 in
Net Weight	4.6 kg | 10.1 lb

Regulatory Compliance/Certifications

Agency	Classification
RoHS 2002/95/EC	Compliant by Exemption
China RoHS SJ/T 11364-2006	Logo 2

Included Products

DB5083
Downtilt Mounting Kit for 4.5 in (114.3 mm) OD round members

DB380
Pipe Mounting Kit for 4.5 in (114.3 mm) OD round members

From North America, toll free
Telephone: 1-800-255-1479
Fax: 1-800-349-5444

Outside North America
Telephone: +1-708-873-2307
Fax: +1-779-435-8579

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Product Specifications

ANDREW.
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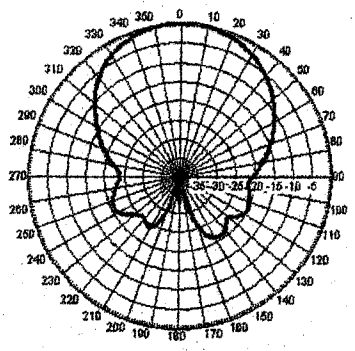
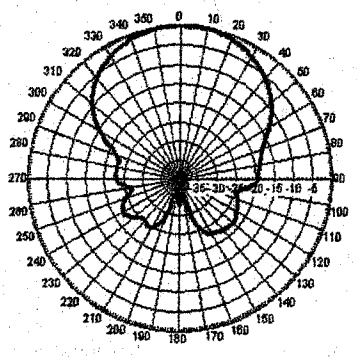
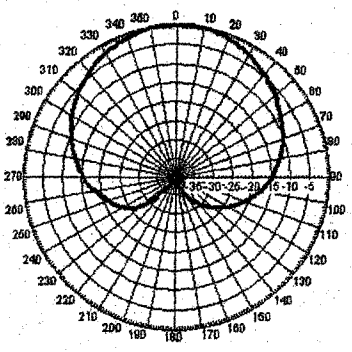
Horizontal Pattern



Freq: 850 MHz, Tilt: 0

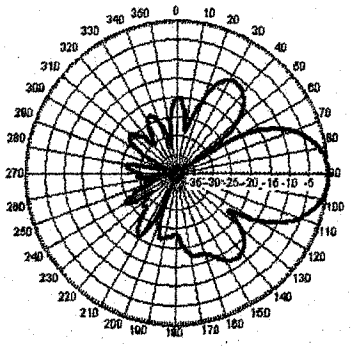


Freq: 940 MHz, Tilt: 0

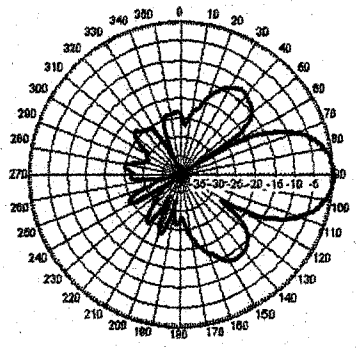


Freq: 1950 MHz, Tilt: 0

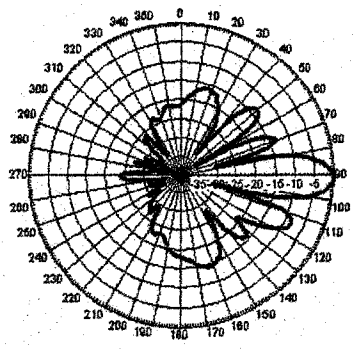
Vertical Pattern



Freq: 850 MHz, Tilt: 0



Freq: 940 MHz, Tilt: 0



Freq: 1950 MHz, Tilt: 0

From North America, toll free
Telephone: 1-800-255-1479
Fax: 1-800-349-5444

Outside North America
Telephone: +1-708-873-2307
Fax: +1-779-435-8579

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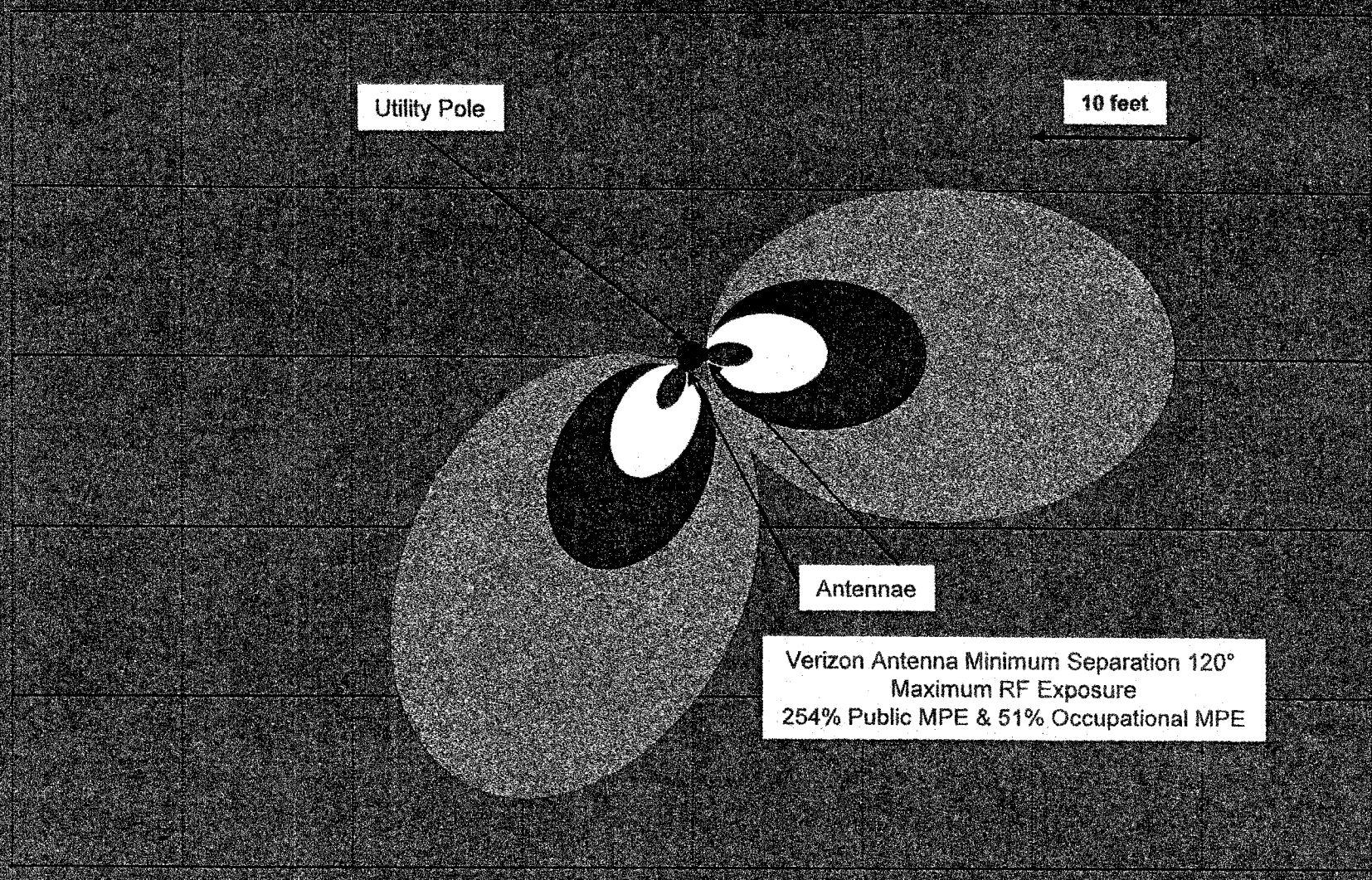
All specifications are subject to change. Please see www.andrew.com for the most current information.

Appendix A-1

RF EXPOSURE AT THE LEVEL OF THE ANTENNA

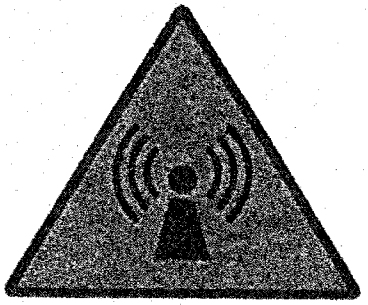
RF EXPOSURE AT ELEVATION OF ANTENNA
PERCENTAGE OF FCC MAXIMUM PUBLIC & OCCUPATIONAL EXPOSURE (MPE) LIMIT



- Red: Greater than 100% Public MPE
- Yellow: Less than 100% Public MPE
- Blue: Less than 20% Public MPE
- Tan: Less than 5% Public MPE
- Green: Less than 1% Public MPE

Appendix A-2

RF NOTICE SIGN



NOTICE

The radio frequency (RF) emissions at this site have been evaluated for potential RF exposure to personnel who may need to work near these antennae.

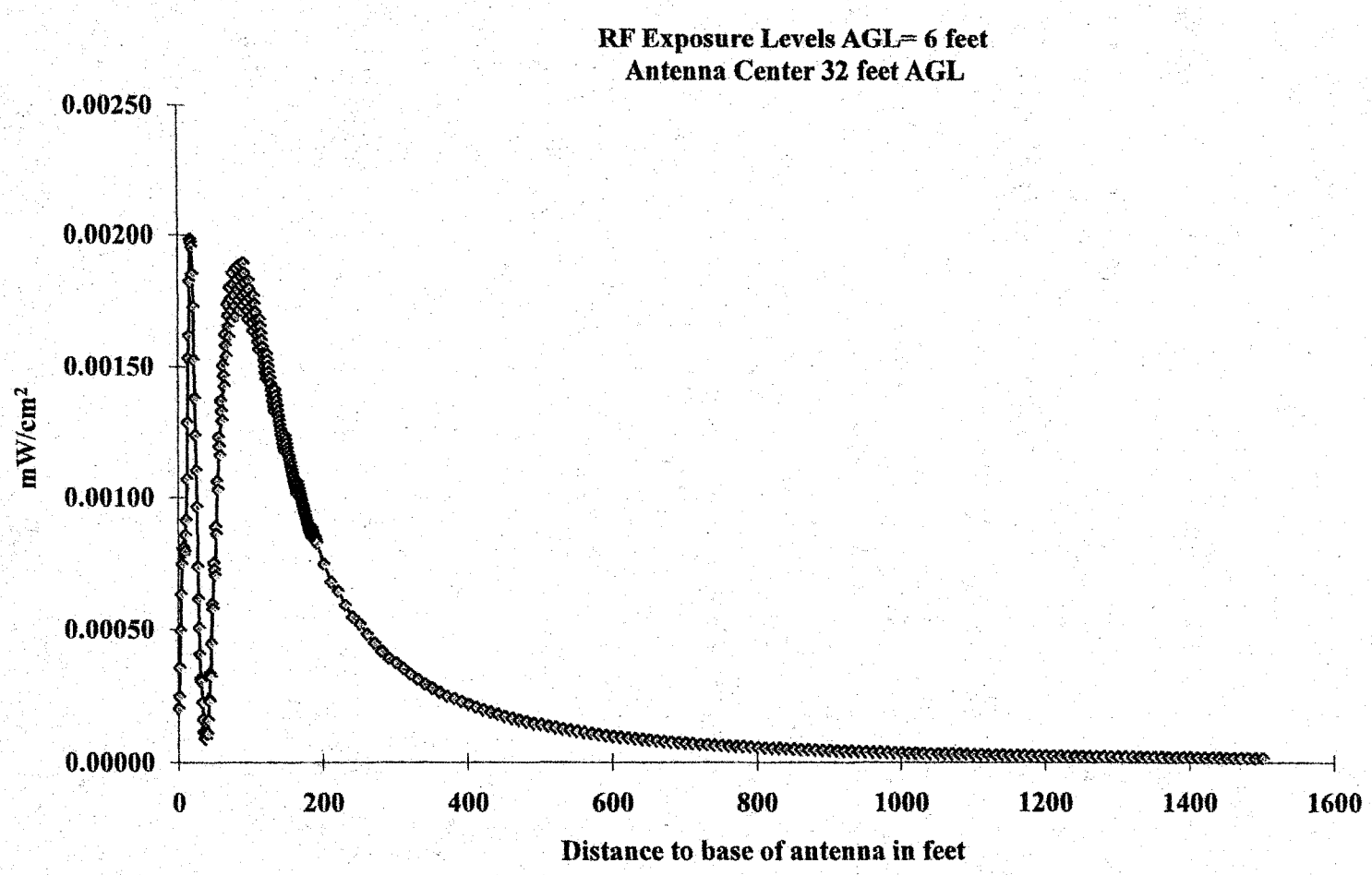
RF EXPOSURE AT 3 FEET OR CLOSER TO THE FACE OF THE ANTENNA MAY EXCEED THE FCC PUBLIC EXPOSURE STANDARD AND THUS ONLY QUALIFIED RF WORKERS MAY WORK IN THIS 3 FOOT EXCLUSION ZONE. OTHERS WHO NEED TO WORK IN THE EXCLUSION ZONE SHOULD CALL _____

FOR INSTRUCTIONS. REFER TO SITE # _____

Reference: Federal Communications Commission (FCC) Public Exposure Standard. OET Bulletin-65, Edition 97-01, August 1997.

Appendix A-3-1

Andrew Antennae Model # DBXLH-8585A-VTM
Exposure Calculation 6.0 ft Above Grade Level (AGL)
ERP 62.4 Watts (~850 MHz)
Antenna Center 32.0 ft AGL


RF Exposure Levels AGL= 6 feet
Antenna Center 32 feet AGL
0.00250
0.00200
0.00150
0.00100
0.00050
0.00000
mW/cm²
0
200
400
600
800
1000
1200
1400
1600
Distance to base of antenna in feet

ARL	26	Max gain (dBd):	10.5	Max exposure:	0.00198299	mW/cm^2

Max ERP (W): 62.4 **Ant type:** Andrew DB772G65ESXM **Feet from site:** 17

RF Exposure Level

Feet to Ant. base	Depress angle	Antenna gain	dB from max ERP	Prop dist in cm	Act ERP in mW	Level mW/cm^2	Precent of FCC STD
0	90.000	-13.67	-24.17	792.48	238.8826	0.00020	0.04225
1	87.797	-12.77	-23.27	793.07	293.8899	0.00024	0.05190
2	85.601	-11.17	-21.67	794.82	424.8001	0.00035	0.07469
3	83.418	-9.65	-20.15	797.74	602.8157	0.00049	0.10521
4	81.254	-8.51	-19.01	801.80	783.7627	0.00064	0.13541
5	79.114	-7.73	-18.23	807.00	937.9606	0.00075	0.15997
6	77.005	-7.34	-17.84	813.31	1026.0880	0.00081	0.17229
7	74.932	-7.24	-17.74	820.70	1049.9886	0.00081	0.17315
8	72.897	-7.3	-17.8	829.15	1035.5822	0.00079	0.16731
9	70.907	-7.13	-17.63	838.62	1076.9228	0.00080	0.17008
10	68.962	-6.71	-17.21	849.07	1186.2728	0.00086	0.18276
11	67.068	-6.33	-16.83	860.49	1294.7460	0.00091	0.19422
12	65.225	-5.52	-16.02	872.81	1560.2155	0.00107	0.22748
13	63.435	-4.58	-15.08	886.02	1937.2452	0.00129	0.27409
14	61.699	-3.69	-14.19	900.06	2377.8507	0.00153	0.32601
15	60.018	-3.31	-13.81	914.91	2595.2822	0.00162	0.34437
16	58.392	-2.64	-13.14	930.51	3028.2002	0.00183	0.38845
17	56.821	-2.13	-12.63	946.84	3405.5291	0.00198	0.42191
18	55.305	-2	-12.5	963.86	3509.0099	0.00197	0.41952
19	53.842	-1.88	-12.38	981.53	3607.3193	0.00195	0.41588
20	52.431	-1.95	-12.45	999.82	3549.6423	0.00185	0.39440
21	51.072	-2.09	-12.59	1018.69	3437.0400	0.00173	0.36787
22	49.764	-2.47	-12.97	1038.11	3149.0865	0.00153	0.32456
23	48.504	-2.74	-13.24	1058.06	2959.2700	0.00138	0.29361
24	47.291	-3.04	-13.54	1078.49	2761.7514	0.00124	0.26372
25	46.123	-3.38	-13.88	1099.39	2553.7865	0.00110	0.23468
26	45.000	-3.8	-14.3	1120.74	2318.3798	0.00096	0.20501
27	43.919	-4.77	-15.27	1142.49	1854.3196	0.00074	0.15779
28	42.879	-5.39	-15.89	1164.64	1607.6244	0.00062	0.13164
29	41.878	-6.1	-16.6	1187.16	1365.1633	0.00051	0.10759
30	40.914	-6.92	-17.42	1210.02	1130.2762	0.00040	0.08574
31	39.987	-7.88	-18.38	1233.22	906.1176	0.00031	0.06618
32	39.094	-7.88	-18.38	1256.72	906.1176	0.00030	0.06372
33	38.234	-9.02	-19.52	1280.52	696.9227	0.00022	0.04721
34	37.405	-10.32	-20.82	1304.60	516.6359	0.00016	0.03372
35	36.607	-11.63	-22.13	1328.94	382.1066	0.00011	0.02403
36	35.838	-12.38	-22.88	1353.53	321.5027	0.00009	0.01949

ARL	26	Max gain (dBd):	10.5	Max exposure:	0.00198299	mW/cm²

Max ERP (W): 62.4 Ant type: Andrew DB772G65ESXM Feet from site: 17

RF Exposure Level

Feet to Ant. base	Depress angle	Antenna gain	dB from max ERP	Prop dist in cm	Act ERP in mW	Level mW/cm²	Precent of FCC STD
37	35.096	-12.38	-22.88	1378.36	321.5027	0.00009	0.01880
38	34.380	-12.26	-22.76	1403.40	330.5100	0.00009	0.01864
39	33.690	-11.1	-21.6	1428.66	431.7025	0.00011	0.02349
40	33.024	-11.1	-21.6	1454.12	431.7025	0.00011	0.02268
41	32.381	-9.32	-19.82	1479.77	650.4061	0.00016	0.03299
42	31.759	-7.4	-17.9	1505.60	1012.0095	0.00023	0.04959
43	31.159	-7.4	-17.9	1531.60	1012.0095	0.00023	0.04792
44	30.579	-5.6	-16.1	1557.76	1531.7384	0.00033	0.07011
45	30.018	-5.6	-16.1	1584.08	1531.7384	0.00032	0.06780
46	29.476	-4	-14.5	1610.54	2214.0355	0.00045	0.09481
47	28.951	-2.57	-13.07	1637.15	3077.4045	0.00060	0.12753
48	28.443	-2.57	-13.07	1663.88	3077.4045	0.00058	0.12346
49	27.951	-1.29	-11.79	1690.75	4132.2310	0.00075	0.16055
50	27.474	-1.29	-11.79	1717.73	4132.2310	0.00073	0.15555
51	27.013	-1.29	-11.79	1744.83	4132.2310	0.00071	0.15076
52	26.565	-0.17	-10.67	1772.04	5347.9162	0.00089	0.18916
53	26.131	-0.17	-10.67	1799.35	5347.9162	0.00086	0.18346
54	25.710	0.86	-9.64	1826.77	6779.2959	0.00106	0.22564
55	25.301	0.86	-9.64	1854.28	6779.2959	0.00103	0.21899
56	24.905	1.77	-8.73	1881.88	8359.5825	0.00123	0.26218
57	24.520	1.77	-8.73	1909.57	8359.5825	0.00120	0.25463
58	24.146	1.77	-8.73	1937.34	8359.5825	0.00116	0.24738
59	23.782	2.61	-7.89	1965.19	10143.4242	0.00137	0.29172
60	23.429	2.61	-7.89	1993.12	10143.4242	0.00133	0.28360
61	23.085	2.61	-7.89	2021.13	10143.4242	0.00130	0.27580
62	22.751	3.38	-7.12	2049.20	12111.1279	0.00151	0.32034
63	22.426	3.38	-7.12	2077.34	12111.1279	0.00147	0.31172
64	22.109	3.38	-7.12	2105.55	12111.1279	0.00143	0.30342
65	21.801	4.06	-6.44	2133.82	14163.9567	0.00162	0.34551
66	21.501	4.06	-6.44	2162.15	14163.9567	0.00158	0.33652
67	21.209	4.06	-6.44	2190.53	14163.9567	0.00154	0.32785
68	20.925	4.7	-5.8	2218.98	16412.8723	0.00174	0.37023
69	20.647	4.7	-5.8	2247.47	16412.8723	0.00170	0.36090
70	20.376	4.7	-5.8	2276.02	16412.8723	0.00165	0.35191
71	20.113	4.7	-5.8	2304.62	16412.8723	0.00161	0.34323
72	19.855	5.29	-5.21	2333.26	18801.1576	0.00180	0.38358
73	19.604	5.29	-5.21	2361.95	18801.1576	0.00176	0.37432
74	19.359	5.29	-5.21	2390.69	18801.1576	0.00172	0.36537
75	19.120	5.29	-5.21	2419.47	18801.1576	0.00168	0.35673
76	18.886	5.84	-4.66	2448.29	21339.5172	0.00186	0.39542
77	18.658	5.84	-4.66	2477.14	21339.5172	0.00182	0.38626

ARL	26	Max gain (dBd):	10.5	Max exposure:	0.00198299	mW/cm²

Max ERP (W): 62.4 **Ant type:** Andrew DB772G65ESXM **Feet from site:** 17

RF Exposure Level

Feet to Ant. base	Depress angle	Antenna gain	dB from max ERP	Prop dist in cm	Act ERP in mW	Level mW/cm²	Precent of FCC STD
78	18.435	5.84	-4.66	2506.04	21339.5172	0.00177	0.37740
79	18.217	5.84	-4.66	2534.98	21339.5172	0.00173	0.36884
80	18.004	5.84	-4.66	2563.95	21339.5172	0.00169	0.36055
81	17.796	6.38	-4.12	2592.95	24164.8770	0.00188	0.39920
82	17.592	6.38	-4.12	2621.99	24164.8770	0.00183	0.39041
83	17.393	6.38	-4.12	2651.06	24164.8770	0.00179	0.38189
84	17.199	6.38	-4.12	2680.16	24164.8770	0.00176	0.37364
85	17.008	6.38	-4.12	2709.29	24164.8770	0.00172	0.36565
86	16.821	6.88	-3.62	2738.45	27113.4380	0.00189	0.40158
87	16.639	6.88	-3.62	2767.64	27113.4380	0.00185	0.39315
88	16.460	6.88	-3.62	2796.86	27113.4380	0.00181	0.38498
89	16.285	6.88	-3.62	2826.11	27113.4380	0.00177	0.37705
90	16.113	6.88	-3.62	2855.38	27113.4380	0.00174	0.36936
91	15.945	7.35	-3.15	2884.67	30212.3557	0.00190	0.40326
92	15.781	7.35	-3.15	2913.99	30212.3557	0.00186	0.39519
93	15.619	7.35	-3.15	2943.33	30212.3557	0.00182	0.38735
94	15.461	7.35	-3.15	2972.70	30212.3557	0.00178	0.37973
95	15.306	7.35	-3.15	3002.09	30212.3557	0.00175	0.37234
96	15.154	7.35	-3.15	3031.50	30212.3557	0.00172	0.36515
97	15.005	7.35	-3.15	3060.93	30212.3557	0.00168	0.35816
98	14.859	7.8	-2.7	3090.38	33510.7841	0.00183	0.38972
99	14.715	7.8	-2.7	3119.85	33510.7841	0.00180	0.38240
100	14.574	7.8	-2.7	3149.34	33510.7841	0.00176	0.37527
101	14.436	7.8	-2.7	3178.85	33510.7841	0.00173	0.36833
102	14.300	7.8	-2.7	3208.37	33510.7841	0.00170	0.36159
103	14.167	7.8	-2.7	3237.92	33510.7841	0.00167	0.35502
104	14.036	7.8	-2.7	3267.48	33510.7841	0.00164	0.34862
105	13.908	8.22	-2.28	3297.06	36913.4460	0.00177	0.37716
106	13.782	8.22	-2.28	3326.65	36913.4460	0.00174	0.37048
107	13.658	8.22	-2.28	3356.26	36913.4460	0.00171	0.36397
108	13.536	8.22	-2.28	3385.89	36913.4460	0.00168	0.35763
109	13.416	8.22	-2.28	3415.53	36913.4460	0.00165	0.35145
110	13.299	8.22	-2.28	3445.18	36913.4460	0.00162	0.34543
111	13.183	8.22	-2.28	3474.85	36913.4460	0.00160	0.33955
112	13.069	8.22	-2.28	3504.54	36913.4460	0.00157	0.33383
113	12.958	8.6	-1.9	3534.23	40288.8239	0.00168	0.35825
114	12.848	8.6	-1.9	3563.94	40288.8239	0.00166	0.35230
115	12.740	8.6	-1.9	3593.67	40288.8239	0.00163	0.34650
116	12.633	8.6	-1.9	3623.40	40288.8239	0.00160	0.34084
117	12.529	8.6	-1.9	3653.15	40288.8239	0.00158	0.33531
118	12.426	8.6	-1.9	3682.91	40288.8239	0.00155	0.32991

ARL	26	Max gain (dBd):	10.5	Max exposure:	0.00198299	mW/cm²

Max ERP (W): 62.4 **Ant type:** Andrew DB772G65ESXM **Feet from site:** 17

RF Exposure Level

Feet to Ant. base	Depress angle	Antenna gain	dB from max ERP	Prop dist in cm	Act ERP in mW	Level mW/cm²	Precent of FCC STD
119	12.325	8.6	-1.9	3712.68	40288.8239	0.00153	0.32464
120	12.225	8.6	-1.9	3742.47	40288.8239	0.00150	0.31950
121	12.127	8.6	-1.9	3772.26	40288.8239	0.00148	0.31447
122	12.031	8.6	-1.9	3802.07	40288.8239	0.00145	0.30956
123	11.936	8.94	-1.56	3831.88	43569.7020	0.00155	0.32958
124	11.842	8.94	-1.56	3861.71	43569.7020	0.00153	0.32451
125	11.750	8.94	-1.56	3891.55	43569.7020	0.00150	0.31955
126	11.659	8.94	-1.56	3921.39	43569.7020	0.00148	0.31470
127	11.570	8.94	-1.56	3951.25	43569.7020	0.00146	0.30996
128	11.482	8.94	-1.56	3981.11	43569.7020	0.00144	0.30533
129	11.395	8.94	-1.56	4010.99	43569.7020	0.00141	0.30080
130	11.310	8.94	-1.56	4040.87	43569.7020	0.00139	0.29637
131	11.226	8.94	-1.56	4070.76	43569.7020	0.00137	0.29203
132	11.143	8.94	-1.56	4100.66	43569.7020	0.00135	0.28779
133	11.061	8.94	-1.56	4130.57	43569.7020	0.00133	0.28364
134	10.981	9.25	-1.25	4160.49	46793.3987	0.00141	0.30026
135	10.901	9.25	-1.25	4190.42	46793.3987	0.00139	0.29598
136	10.823	9.25	-1.25	4220.35	46793.3987	0.00137	0.29180
137	10.746	9.25	-1.25	4250.29	46793.3987	0.00135	0.28770
138	10.670	9.25	-1.25	4280.24	46793.3987	0.00133	0.28369
139	10.595	9.25	-1.25	4310.20	46793.3987	0.00131	0.27976
140	10.521	9.25	-1.25	4340.16	46793.3987	0.00130	0.27591
141	10.448	9.25	-1.25	4370.13	46793.3987	0.00128	0.27214
142	10.376	9.25	-1.25	4400.11	46793.3987	0.00126	0.26844
143	10.305	9.25	-1.25	4430.10	46793.3987	0.00124	0.26482
144	10.235	9.25	-1.25	4460.09	46793.3987	0.00123	0.26127
145	10.166	9.25	-1.25	4490.09	46793.3987	0.00121	0.25779
146	10.098	9.25	-1.25	4520.09	46793.3987	0.00120	0.25438
147	10.030	9.25	-1.25	4550.10	46793.3987	0.00118	0.25104
148	9.964	9.52	-0.98	4580.12	49794.8685	0.00124	0.26365
149	9.898	9.52	-0.98	4610.14	49794.8685	0.00122	0.26023
150	9.834	9.52	-0.98	4640.17	49794.8685	0.00121	0.25687
151	9.770	9.52	-0.98	4670.21	49794.8685	0.00119	0.25358
152	9.707	9.52	-0.98	4700.25	49794.8685	0.00118	0.25035
153	9.644	9.52	-0.98	4730.30	49794.8685	0.00116	0.24717
154	9.583	9.52	-0.98	4760.35	49794.8685	0.00115	0.24406
155	9.522	9.52	-0.98	4790.40	49794.8685	0.00113	0.24101
156	9.462	9.52	-0.98	4820.47	49794.8685	0.00112	0.23801
157	9.403	9.52	-0.98	4850.54	49794.8685	0.00110	0.23507
158	9.345	9.52	-0.98	4880.61	49794.8685	0.00109	0.23218
159	9.287	9.52	-0.98	4910.69	49794.8685	0.00108	0.22935

ARL	26	Max gain (dBd):	10.5	Max exposure:	0.00198299	mW/cm ^{2}

Max ERP (W): 62.4 **Ant type:** Andrew DB772G65ESXM **Feet from site:** 17

RF Exposure Level

Feet to Ant. base	Depress angle	Antenna gain	dB from max ERP	Prop dist in cm	Act ERP in mW	Level mW/cm ^{2}	Precent of FCC STD
160	9.230	9.52	-0.98	4940.77	49794.8685	0.00106	0.22656
161	9.174	9.52	-0.98	4970.86	49794.8685	0.00105	0.22383
162	9.118	9.52	-0.98	5000.95	49794.8685	0.00104	0.22114
163	9.063	9.52	-0.98	5031.05	49794.8685	0.00103	0.21851
164	9.009	9.52	-0.98	5061.15	49794.8685	0.00101	0.21591
165	8.955	9.75	-0.75	5091.25	52503.0568	0.00106	0.22497
166	8.902	9.75	-0.75	5121.37	52503.0568	0.00104	0.22234
167	8.849	9.75	-0.75	5151.48	52503.0568	0.00103	0.21974
168	8.797	9.75	-0.75	5181.60	52503.0568	0.00102	0.21720
169	8.746	9.75	-0.75	5211.72	52503.0568	0.00101	0.21469
170	8.696	9.75	-0.75	5241.85	52503.0568	0.00100	0.21223
171	8.645	9.75	-0.75	5271.98	52503.0568	0.00099	0.20981
172	8.596	9.75	-0.75	5302.12	52503.0568	0.00097	0.20743
173	8.547	9.75	-0.75	5332.26	52503.0568	0.00096	0.20510
174	8.499	9.75	-0.75	5362.40	52503.0568	0.00095	0.20280
175	8.451	9.75	-0.75	5392.55	52503.0568	0.00094	0.20054
176	8.403	9.75	-0.75	5422.70	52503.0568	0.00093	0.19831
177	8.357	9.75	-0.75	5452.85	52503.0568	0.00092	0.19612
178	8.310	9.75	-0.75	5483.01	52503.0568	0.00091	0.19397
179	8.264	9.75	-0.75	5513.17	52503.0568	0.00090	0.19186
180	8.219	9.75	-0.75	5543.34	52503.0568	0.00089	0.18977
181	8.174	9.75	-0.75	5573.51	52503.0568	0.00088	0.18773
182	8.130	9.75	-0.75	5603.68	52503.0568	0.00087	0.18571
183	8.086	9.75	-0.75	5633.86	52503.0568	0.00086	0.18373
184	8.043	9.75	-0.75	5664.03	52503.0568	0.00085	0.18177
185	8.000	9.95	-0.55	5694.22	54977.4497	0.00089	0.18833
186	7.958	9.95	-0.55	5724.40	54977.4497	0.00088	0.18635
187	7.916	9.95	-0.55	5754.59	54977.4497	0.00087	0.18440
188	7.874	9.95	-0.55	5784.78	54977.4497	0.00086	0.18248
189	7.833	9.95	-0.55	5814.97	54977.4497	0.00085	0.18059
190	7.792	9.95	-0.55	5845.17	54977.4497	0.00084	0.17873
191	7.752	9.95	-0.55	5875.37	54977.4497	0.00083	0.17689
201	7.370	9.95	-0.55	6177.52	54977.4497	0.00075	0.16001
211	7.025	9.95	-0.55	6479.92	54977.4497	0.00068	0.14543
221	6.710	10.12	-0.38	6782.54	57172.1586	0.00065	0.13804
231	6.422	10.12	-0.38	7085.34	57172.1586	0.00059	0.12649
241	6.157	10.12	-0.38	7388.30	57172.1586	0.00055	0.11633
251	5.914	10.25	-0.25	7691.42	58909.3987	0.00052	0.11060
261	5.689	10.25	-0.25	7994.65	58909.3987	0.00048	0.10237
271	5.480	10.25	-0.25	8298.01	58909.3987	0.00045	0.09502
281	5.286	10.25	-0.25	8601.46	58909.3987	0.00042	0.08844

ARL 26 | Max gain (dBd): 10.5 | Max exposure: 0.00198299 mW/cm²

Max ERP (W): 62.4 | Ant type: Andrew DB772G65ESXM | Feet from site: 17

RF Exposure Level

Feet to Ant. base	Depress angle	Antenna gain	dB from max ERP	Prop dist in cm	Act ERP in mW	Level mW/cm²	Precent of FCC STD
291	5.106	10.25	-0.25	8905.01	58909.3987	0.00039	0.08251
301	4.937	10.35	-0.15	9208.64	60281.5748	0.00037	0.07896
311	4.779	10.35	-0.15	9512.35	60281.5748	0.00035	0.07400
321	4.631	10.35	-0.15	9816.12	60281.5748	0.00033	0.06949
331	4.491	10.35	-0.15	10119.96	60281.5748	0.00031	0.06538
341	4.360	10.35	-0.15	10423.85	60281.5748	0.00029	0.06162
351	4.236	10.35	-0.15	10727.79	60281.5748	0.00027	0.05818
361	4.119	10.35	-0.15	11031.78	60281.5748	0.00026	0.05502
371	4.009	10.35	-0.15	11335.81	60281.5748	0.00024	0.05210
381	3.904	10.43	-0.07	11639.89	61402.2930	0.00024	0.05034
391	3.804	10.43	-0.07	11944.00	61402.2930	0.00022	0.04781
401	3.710	10.43	-0.07	12248.14	61402.2930	0.00021	0.04546
411	3.620	10.43	-0.07	12552.32	61402.2930	0.00020	0.04328
421	3.534	10.43	-0.07	12856.53	61402.2930	0.00019	0.04126
431	3.452	10.43	-0.07	13160.76	61402.2930	0.00019	0.03937
441	3.374	10.43	-0.07	13465.02	61402.2930	0.00018	0.03762
451	3.299	10.43	-0.07	13769.30	61402.2930	0.00017	0.03597
461	3.228	10.43	-0.07	14073.61	61402.2930	0.00016	0.03443
471	3.160	10.43	-0.07	14377.94	61402.2930	0.00016	0.03299
481	3.094	10.43	-0.07	14682.28	61402.2930	0.00015	0.03164
491	3.031	10.43	-0.07	14986.65	61402.2930	0.00014	0.03036
501	2.971	10.48	-0.02	15291.03	62113.2980	0.00014	0.02951
511	2.913	10.48	-0.02	15595.43	62113.2980	0.00013	0.02837
521	2.857	10.48	-0.02	15899.84	62113.2980	0.00013	0.02729
531	2.803	10.48	-0.02	16204.27	62113.2980	0.00012	0.02627
541	2.751	10.48	-0.02	16508.71	62113.2980	0.00012	0.02531
551	2.702	10.48	-0.02	16813.17	62113.2980	0.00011	0.02441
561	2.654	10.48	-0.02	17117.63	62113.2980	0.00011	0.02354
571	2.607	10.48	-0.02	17422.11	62113.2980	0.00011	0.02273
581	2.562	10.48	-0.02	17726.60	62113.2980	0.00010	0.02195
591	2.519	10.48	-0.02	18031.10	62113.2980	0.00010	0.02122
601	2.477	10.48	-0.02	18335.61	62113.2980	0.00010	0.02052
611	2.437	10.48	-0.02	18640.13	62113.2980	0.00009	0.01986
621	2.397	10.48	-0.02	18944.66	62113.2980	0.00009	0.01922
631	2.360	10.48	-0.02	19249.20	62113.2980	0.00009	0.01862
641	2.323	10.48	-0.02	19553.75	62113.2980	0.00008	0.01804
651	2.287	10.48	-0.02	19858.30	62113.2980	0.00008	0.01749
661	2.253	10.48	-0.02	20162.86	62113.2980	0.00008	0.01697
671	2.219	10.48	-0.02	20467.43	62113.2980	0.00008	0.01647
681	2.186	10.48	-0.02	20772.00	62113.2980	0.00008	0.01599
691	2.155	10.48	-0.02	21076.58	62113.2980	0.00007	0.01553

ARL	26	Max gain (dBd):	10.5	Max exposure:	0.00198299	mW/cm²

Max ERP (W): 62.4 **Ant type:** Andrew DB772G65ESXM **Feet from site:** 17

RF Exposure Level

Feet to Ant. base	Depress angle	Antenna gain	dB from max ERP	Prop dist in cm	Act ERP in mW	Level mW/cm²	Precent of FCC STD
701	2.124	10.48	-0.02	21381.17	62113.2980	0.00007	0.01509
711	2.094	10.48	-0.02	21685.76	62113.2980	0.00007	0.01467
721	2.065	10.48	-0.02	21990.36	62113.2980	0.00007	0.01427
731	2.037	10.48	-0.02	22294.97	62113.2980	0.00007	0.01388
741	2.010	10.48	-0.02	22599.58	62113.2980	0.00006	0.01351
751	1.983	10.5	0	22904.19	62400.0000	0.00006	0.01321
761	1.957	10.5	0	23208.81	62400.0000	0.00006	0.01287
771	1.931	10.5	0	23513.44	62400.0000	0.00006	0.01254
781	1.907	10.5	0	23818.07	62400.0000	0.00006	0.01222
791	1.883	10.5	0	24122.70	62400.0000	0.00006	0.01191
801	1.859	10.5	0	24427.34	62400.0000	0.00005	0.01162
811	1.836	10.5	0	24731.98	62400.0000	0.00005	0.01133
821	1.814	10.5	0	25036.63	62400.0000	0.00005	0.01106
831	1.792	10.5	0	25341.27	62400.0000	0.00005	0.01079
841	1.771	10.5	0	25645.93	62400.0000	0.00005	0.01054
851	1.750	10.5	0	25950.58	62400.0000	0.00005	0.01029
861	1.730	10.5	0	26255.24	62400.0000	0.00005	0.01005
871	1.710	10.5	0	26559.91	62400.0000	0.00005	0.00982
881	1.690	10.5	0	26864.57	62400.0000	0.00005	0.00960
891	1.671	10.5	0	27169.24	62400.0000	0.00004	0.00939
901	1.653	10.5	0	27473.91	62400.0000	0.00004	0.00918
911	1.635	10.5	0	27778.59	62400.0000	0.00004	0.00898
921	1.617	10.5	0	28083.26	62400.0000	0.00004	0.00879
931	1.600	10.5	0	28387.94	62400.0000	0.00004	0.00860
941	1.583	10.5	0	28692.63	62400.0000	0.00004	0.00842
951	1.566	10.5	0	28997.31	62400.0000	0.00004	0.00824
961	1.550	10.5	0	29302.00	62400.0000	0.00004	0.00807
971	1.534	10.5	0	29606.69	62400.0000	0.00004	0.00791
981	1.518	10.5	0	29911.38	62400.0000	0.00004	0.00775
991	1.503	10.5	0	30216.07	62400.0000	0.00004	0.00759
1001	1.488	10.5	0	30520.77	62400.0000	0.00003	0.00744
1011	1.473	10.5	0	30825.47	62400.0000	0.00003	0.00729
1021	1.459	10.5	0	31130.17	62400.0000	0.00003	0.00715
1031	1.445	10.5	0	31434.87	62400.0000	0.00003	0.00701

ARL	26	Max gain (dBd):	12.5	Max exposure:	0.00248673	mW/cm^2

Max ERP (W): 98.9 **Ant type:** Andrew DB772G65ESXM **Feet from site:** 8

RF Exposure Level

Feet to Ant. base	Depress angle	Antenna gain	dB from max ERP	Prop dist in cm	Act ERP in mW	Level mW/cm^2	Precent of FCC STD
0	90.000	-6	-18.5	792.48	1396.9996	0.00116	0.11612
1	87.797	-5.6	-18.1	793.07	1531.7796	0.00127	0.12714
2	85.601	-5.2	-17.7	794.82	1679.5630	0.00139	0.13879
3	83.418	-4.9	-17.4	797.74	1799.6841	0.00148	0.14763
4	81.254	-4.2	-16.7	801.80	2114.4445	0.00172	0.17169
5	79.114	-3.5	-16	807.00	2484.2557	0.00199	0.19913
6	77.005	-3.1	-15.6	813.31	2723.9322	0.00215	0.21497
7	74.932	-2.6	-15.1	820.70	3056.3022	0.00237	0.23688
8	72.897	-2.3	-14.8	829.15	3274.8868	0.00249	0.24867
9	70.907	-2.4	-14.9	838.62	3200.3413	0.00238	0.23756
10	68.962	-2.7	-15.2	849.07	2986.7323	0.00216	0.21627
11	67.068	-3	-15.5	860.49	2787.3807	0.00197	0.19652
12	65.225	-3.8	-16.3	872.81	2318.4423	0.00159	0.15887
13	63.435	-5	-17.5	886.02	1758.7183	0.00117	0.11695
14	61.699	-6.6	-19.1	900.06	1216.7358	0.00078	0.07841
15	60.018	-7.9	-20.4	914.91	901.9787	0.00056	0.05625
16	58.392	-10.6	-23.1	930.51	484.3913	0.00029	0.02920
17	56.821	-14.3	-26.8	946.84	206.6314	0.00012	0.01203
18	55.305	-15.9	-28.4	963.86	142.9540	0.00008	0.00803
19	53.842	-14.9	-27.4	981.53	179.9684	0.00010	0.00975
20	52.431	-12.8	-25.3	999.82	291.8746	0.00015	0.01524
21	51.072	-10.9	-23.4	1018.69	452.0602	0.00023	0.02274
22	49.764	-7.5	-20	1038.11	989.0000	0.00048	0.04791
23	48.504	-6.2	-18.7	1058.06	1334.1243	0.00062	0.06221
24	47.291	-5.3	-17.8	1078.49	1641.3315	0.00074	0.07366
25	46.123	-4.6	-17.1	1099.39	1928.3963	0.00083	0.08329
26	45.000	-4.1	-16.6	1120.74	2163.6962	0.00090	0.08993
27	43.919	-3.8	-16.3	1142.49	2318.4423	0.00093	0.09272
28	42.879	-4.1	-16.6	1164.64	2163.6962	0.00083	0.08327
29	41.878	-4.7	-17.2	1187.16	1884.5007	0.00070	0.06980
30	40.914	-5.7	-18.2	1210.02	1496.9121	0.00053	0.05337
31	39.987	-7	-19.5	1233.22	1109.6763	0.00038	0.03809
32	39.094	-7	-19.5	1256.72	1109.6763	0.00037	0.03668
33	38.234	-8.1	-20.6	1280.52	861.3830	0.00027	0.02742
34	37.405	-8.8	-21.3	1304.60	733.1558	0.00022	0.02249
35	36.607	-8.5	-21	1328.94	785.5906	0.00023	0.02322
36	35.838	-7.1	-19.6	1353.53	1084.4169	0.00031	0.03090

ARL	26	Max gain (dBd):	12.5	Max exposure:	0.00248673	mW/cm^2

Max ERP (W): 98.9 Ant type: Andrew DB772G65ESXM Feet from site: 8

RF Exposure Level

Feet to Ant. base	Depress angle	Antenna gain	dB from max ERP	Prop dist in cm	Act ERP in mW	Level mW/cm^2	Precent of FCC STD
37	35.096	-7.1	-19.6	1378.36	1084.4169	0.00030	0.02980
38	34.380	-5.3	-17.8	1403.40	1641.3315	0.00044	0.04350
39	33.690	-3.5	-16	1428.66	2484.2557	0.00064	0.06354
40	33.024	-3.5	-16	1454.12	2484.2557	0.00061	0.06133
41	32.381	-2	-14.5	1479.77	3509.1044	0.00084	0.08366
42	31.759	-0.6	-13.1	1505.60	4843.9125	0.00112	0.11155
43	31.159	-0.6	-13.1	1531.60	4843.9125	0.00108	0.10780
44	30.579	0.6	-11.9	1557.76	6385.5203	0.00137	0.13737
45	30.018	0.6	-11.9	1584.08	6385.5203	0.00133	0.13284
46	29.476	1.6	-10.9	1610.54	8038.8938	0.00162	0.16179
47	28.951	2.5	-10	1637.15	9890.0000	0.00193	0.19263
48	28.443	2.5	-10	1663.88	9890.0000	0.00186	0.18649
49	27.951	3.1	-9.4	1690.75	11355.2393	0.00207	0.20736
50	27.474	3.1	-9.4	1717.73	11355.2393	0.00201	0.20090
51	27.013	3.1	-9.4	1744.83	11355.2393	0.00195	0.19471
52	26.565	3.6	-8.9	1772.04	12740.7881	0.00212	0.21181
53	26.131	3.6	-8.9	1799.35	12740.7881	0.00205	0.20543
54	25.710	3.9	-8.6	1826.77	13652.0004	0.00214	0.21356
55	25.301	3.9	-8.6	1854.28	13652.0004	0.00207	0.20727
56	24.905	3.9	-8.6	1881.88	13652.0004	0.00201	0.20124
57	24.520	3.9	-8.6	1909.57	13652.0004	0.00195	0.19544
58	24.146	3.9	-8.6	1937.34	13652.0004	0.00190	0.18988
59	23.782	3.8	-8.7	1965.19	13341.2429	0.00180	0.18034
60	23.429	3.8	-8.7	1993.12	13341.2429	0.00175	0.17532
61	23.085	3.8	-8.7	2021.13	13341.2429	0.00170	0.17049
62	22.751	3.4	-9.1	2049.20	12167.3581	0.00151	0.15126
63	22.426	3.4	-9.1	2077.34	12167.3581	0.00147	0.14719
64	22.109	3.4	-9.1	2105.55	12167.3581	0.00143	0.14327
65	21.801	2.6	-9.9	2133.82	10120.3677	0.00116	0.11603
66	21.501	2.6	-9.9	2162.15	10120.3677	0.00113	0.11301
67	21.209	2.6	-9.9	2190.53	10120.3677	0.00110	0.11010
68	20.925	1.5	-11	2218.98	7855.9062	0.00083	0.08329
69	20.647	1.5	-11	2247.47	7855.9062	0.00081	0.08119
70	20.376	1.5	-11	2276.02	7855.9062	0.00079	0.07917
71	20.113	1.5	-11	2304.62	7855.9062	0.00077	0.07721
72	19.855	0	-12.5	2333.26	5561.5557	0.00053	0.05333
73	19.604	0	-12.5	2361.95	5561.5557	0.00052	0.05204
74	19.359	0	-12.5	2390.69	5561.5557	0.00051	0.05080
75	19.120	0	-12.5	2419.47	5561.5557	0.00050	0.04960
76	18.886	-2.5	-15	2448.29	3127.4926	0.00027	0.02724
77	18.658	-2.5	-15	2477.14	3127.4926	0.00027	0.02661

ARL	26	Max gain (dBd):	12.5	Max exposure:	0.00248673	mW/cm²

Max ERP (W): 98.9 **Ant type:** Andrew DB772G65ESXM **Feet from site:** 8

RF Exposure Level

Feet to Ant. base	Depress angle	Antenna gain	dB from max ERP	Prop dist in cm	Act ERP in mW	Level mW/cm²	Precent of FCC STD
78	18.435	-2.5	-15	2506.04	3127.4926	0.00026	0.02600
79	18.217	-2.5	-15	2534.98	3127.4926	0.00025	0.02541
80	18.004	-2.5	-15	2563.95	3127.4926	0.00025	0.02484
81	17.796	-6.3	-18.8	2592.95	1303.7559	0.00010	0.01012
82	17.592	-6.3	-18.8	2621.99	1303.7559	0.00010	0.00990
83	17.393	-6.3	-18.8	2651.06	1303.7559	0.00010	0.00968
84	17.199	-6.3	-18.8	2680.16	1303.7559	0.00009	0.00947
85	17.008	-6.3	-18.8	2709.29	1303.7559	0.00009	0.00927
86	16.821	-14.1	-26.6	2738.45	216.3696	0.00002	0.00151
87	16.639	-14.1	-26.6	2767.64	216.3696	0.00001	0.00147
88	16.460	-14.1	-26.6	2796.86	216.3696	0.00001	0.00144
89	16.285	-14.1	-26.6	2826.11	216.3696	0.00001	0.00141
90	16.113	-14.1	-26.6	2855.38	216.3696	0.00001	0.00139
91	15.945	-18.9	-31.4	2884.67	71.6467	0.00000	0.00045
92	15.781	-18.9	-31.4	2913.99	71.6467	0.00000	0.00044
93	15.619	-18.9	-31.4	2943.33	71.6467	0.00000	0.00043
94	15.461	-18.9	-31.4	2972.70	71.6467	0.00000	0.00042
95	15.306	-18.9	-31.4	3002.09	71.6467	0.00000	0.00041
96	15.154	-18.9	-31.4	3031.50	71.6467	0.00000	0.00041
97	15.005	-18.9	-31.4	3060.93	71.6467	0.00000	0.00040
98	14.859	-7.2	-19.7	3090.38	1059.7326	0.00006	0.00579
99	14.715	-7.2	-19.7	3119.85	1059.7326	0.00006	0.00568
100	14.574	-7.2	-19.7	3149.34	1059.7326	0.00006	0.00558
101	14.436	-7.2	-19.7	3178.85	1059.7326	0.00005	0.00547
102	14.300	-7.2	-19.7	3208.37	1059.7326	0.00005	0.00537
103	14.167	-7.2	-19.7	3237.92	1059.7326	0.00005	0.00528
104	14.036	-7.2	-19.7	3267.48	1059.7326	0.00005	0.00518
105	13.908	-1.9	-14.4	3297.06	3590.8420	0.00017	0.01724
106	13.782	-1.9	-14.4	3326.65	3590.8420	0.00017	0.01694
107	13.658	-1.9	-14.4	3356.26	3590.8420	0.00017	0.01664
108	13.536	-1.9	-14.4	3385.89	3590.8420	0.00016	0.01635
109	13.416	-1.9	-14.4	3415.53	3590.8420	0.00016	0.01607
110	13.299	-1.9	-14.4	3445.18	3590.8420	0.00016	0.01579
111	13.183	-1.9	-14.4	3474.85	3590.8420	0.00016	0.01552
112	13.069	-1.9	-14.4	3504.54	3590.8420	0.00015	0.01526
113	12.958	1.5	-11	3534.23	7855.9062	0.00033	0.03283
114	12.848	1.5	-11	3563.94	7855.9062	0.00032	0.03229
115	12.740	1.5	-11	3593.67	7855.9062	0.00032	0.03176
116	12.633	1.5	-11	3623.40	7855.9062	0.00031	0.03124
117	12.529	1.5	-11	3653.15	7855.9062	0.00031	0.03073
118	12.426	1.5	-11	3682.91	7855.9062	0.00030	0.03023

ARL	26	Max gain (dBd):	12.5	Max exposure:	0.00248673	mW/cm²

Max ERP (W): 98.9 Ant type: Andrew DB772G65ESXM Feet from site: 8

RF Exposure Level

Feet to Ant. base	Depress angle	Antenna gain	dB from max ERP	Prop dist in cm	Act ERP in mW	Level mW/cm²	Precent of FCC STD
119	12.325	1.5	-11	3712.68	7855.9062	0.00030	0.02975
120	12.225	1.5	-11	3742.47	7855.9062	0.00029	0.02928
121	12.127	1.5	-11	3772.26	7855.9062	0.00029	0.02882
122	12.031	1.5	-11	3802.07	7855.9062	0.00028	0.02837
123	11.936	4	-8.5	3831.88	13969.9963	0.00050	0.04967
124	11.842	4	-8.5	3861.71	13969.9963	0.00049	0.04890
125	11.750	4	-8.5	3891.55	13969.9963	0.00048	0.04816
126	11.659	4	-8.5	3921.39	13969.9963	0.00047	0.04743
127	11.570	4	-8.5	3951.25	13969.9963	0.00047	0.04671
128	11.482	4	-8.5	3981.11	13969.9963	0.00046	0.04601
129	11.395	4	-8.5	4010.99	13969.9963	0.00045	0.04533
130	11.310	4	-8.5	4040.87	13969.9963	0.00045	0.04466
131	11.226	4	-8.5	4070.76	13969.9963	0.00044	0.04401
132	11.143	4	-8.5	4100.66	13969.9963	0.00043	0.04337
133	11.061	4	-8.5	4130.57	13969.9963	0.00043	0.04274
134	10.981	6	-6.5	4160.49	22140.9521	0.00067	0.06677
135	10.901	6	-6.5	4190.42	22140.9521	0.00066	0.06582
136	10.823	6	-6.5	4220.35	22140.9521	0.00065	0.06489
137	10.746	6	-6.5	4250.29	22140.9521	0.00064	0.06398
138	10.670	6	-6.5	4280.24	22140.9521	0.00063	0.06309
139	10.595	6	-6.5	4310.20	22140.9521	0.00062	0.06222
140	10.521	6	-6.5	4340.16	22140.9521	0.00061	0.06136
141	10.448	6	-6.5	4370.13	22140.9521	0.00061	0.06052
142	10.376	6	-6.5	4400.11	22140.9521	0.00060	0.05970
143	10.305	6	-6.5	4430.10	22140.9521	0.00059	0.05889
144	10.235	6	-6.5	4460.09	22140.9521	0.00058	0.05810
145	10.166	6	-6.5	4490.09	22140.9521	0.00057	0.05733
146	10.098	6	-6.5	4520.09	22140.9521	0.00057	0.05657
147	10.030	6	-6.5	4550.10	22140.9521	0.00056	0.05583
148	9.964	7.6	-4.9	4580.12	32003.4127	0.00080	0.07964
149	9.898	7.6	-4.9	4610.14	32003.4127	0.00079	0.07861
150	9.834	7.6	-4.9	4640.17	32003.4127	0.00078	0.07759
151	9.770	7.6	-4.9	4670.21	32003.4127	0.00077	0.07660
152	9.707	7.6	-4.9	4700.25	32003.4127	0.00076	0.07562
153	9.644	7.6	-4.9	4730.30	32003.4127	0.00075	0.07466
154	9.583	7.6	-4.9	4760.35	32003.4127	0.00074	0.07372
155	9.522	7.6	-4.9	4790.40	32003.4127	0.00073	0.07280
156	9.462	7.6	-4.9	4820.47	32003.4127	0.00072	0.07190
157	9.403	7.6	-4.9	4850.54	32003.4127	0.00071	0.07101
158	9.345	7.6	-4.9	4880.61	32003.4127	0.00070	0.07014
159	9.287	7.6	-4.9	4910.69	32003.4127	0.00069	0.06928

ARL	26	Max gain (dBd):	12.5	Max exposure:	0.00248673	mW/cm^2

Max ERP (W): 98.9 **Ant type:** Andrew DB772G65ESXM **Feet from site:** 8

RF Exposure Level

Feet to Ant. base	Depress angle	Antenna gain	dB from max ERP	Prop dist in cm	Act ERP in mW	Level mW/cm^2	Precent of FCC STD
160	9.230	7.6	-4.9	4940.77	32003.4127	0.00068	0.06844
161	9.174	7.6	-4.9	4970.86	32003.4127	0.00068	0.06761
162	9.118	7.6	-4.9	5000.95	32003.4127	0.00067	0.06680
163	9.063	7.6	-4.9	5031.05	32003.4127	0.00066	0.06600
164	9.009	7.6	-4.9	5061.15	32003.4127	0.00065	0.06522
165	8.955	8.8	-3.7	5091.25	42188.7144	0.00085	0.08497
166	8.902	8.8	-3.7	5121.37	42188.7144	0.00084	0.08397
167	8.849	8.8	-3.7	5151.48	42188.7144	0.00083	0.08299
168	8.797	8.8	-3.7	5181.60	42188.7144	0.00082	0.08203
169	8.746	8.8	-3.7	5211.72	42188.7144	0.00081	0.08108
170	8.696	8.8	-3.7	5241.85	42188.7144	0.00080	0.08015
171	8.645	8.8	-3.7	5271.98	42188.7144	0.00079	0.07924
172	8.596	8.8	-3.7	5302.12	42188.7144	0.00078	0.07834
173	8.547	8.8	-3.7	5332.26	42188.7144	0.00077	0.07746
174	8.499	8.8	-3.7	5362.40	42188.7144	0.00077	0.07659
175	8.451	8.8	-3.7	5392.55	42188.7144	0.00076	0.07574
176	8.403	8.8	-3.7	5422.70	42188.7144	0.00075	0.07490
177	8.357	8.8	-3.7	5452.85	42188.7144	0.00074	0.07407
178	8.310	8.8	-3.7	5483.01	42188.7144	0.00073	0.07326
179	8.264	8.8	-3.7	5513.17	42188.7144	0.00072	0.07246
180	8.219	8.8	-3.7	5543.34	42188.7144	0.00072	0.07167
181	8.174	8.8	-3.7	5573.51	42188.7144	0.00071	0.07090
182	8.130	8.8	-3.7	5603.68	42188.7144	0.00070	0.07014
183	8.086	8.8	-3.7	5633.86	42188.7144	0.00069	0.06939
184	8.043	8.8	-3.7	5664.03	42188.7144	0.00069	0.06865
185	8.000	9.8	-2.7	5694.22	53112.4447	0.00086	0.08551
186	7.958	9.8	-2.7	5724.40	53112.4447	0.00085	0.08461
187	7.916	9.8	-2.7	5754.59	53112.4447	0.00084	0.08373
188	7.874	9.8	-2.7	5784.78	53112.4447	0.00083	0.08285
189	7.833	9.8	-2.7	5814.97	53112.4447	0.00082	0.08200
190	7.792	9.8	-2.7	5845.17	53112.4447	0.00081	0.08115
191	7.752	9.8	-2.7	5875.37	53112.4447	0.00080	0.08032
201	7.370	9.8	-2.7	6177.52	53112.4447	0.00073	0.07265
211	7.025	9.8	-2.7	6479.92	53112.4447	0.00066	0.06603
221	6.710	10.6	-1.9	6782.54	63855.2033	0.00072	0.07246
231	6.422	10.6	-1.9	7085.34	63855.2033	0.00066	0.06640
241	6.157	10.6	-1.9	7388.30	63855.2033	0.00061	0.06107
251	5.914	11.3	-1.2	7691.42	75023.3222	0.00066	0.06620
261	5.689	11.3	-1.2	7994.65	75023.3222	0.00061	0.06128
271	5.480	11.3	-1.2	8298.01	75023.3222	0.00057	0.05688
281	5.286	11.3	-1.2	8601.46	75023.3222	0.00053	0.05294

ARL	26	Max gain (dBd):	12.5	Max exposure:	0.00248673	mW/cm²

Max ERP (W): 98.9 Ant type: Andrew DB772G65ESXM Feet from site: 8

RF Exposure Level

Feet to Ant. base	Depress angle	Antenna gain	dB from max ERP	Prop dist in cm	Act ERP in mW	Level mW/cm²	Precent of FCC STD
291	5.106	11.3	-1.2	8905.01	75023.3222	0.00049	0.04939
301	4.937	11.8	-0.7	9208.64	84177.5520	0.00052	0.05182
311	4.779	11.8	-0.7	9512.35	84177.5520	0.00049	0.04856
321	4.631	11.8	-0.7	9816.12	84177.5520	0.00046	0.04560
331	4.491	11.8	-0.7	10119.96	84177.5520	0.00043	0.04291
341	4.360	11.8	-0.7	10423.85	84177.5520	0.00040	0.04044
351	4.236	11.8	-0.7	10727.79	84177.5520	0.00038	0.03818
361	4.119	11.8	-0.7	11031.78	84177.5520	0.00036	0.03611
371	4.009	11.8	-0.7	11335.81	84177.5520	0.00034	0.03420
381	3.904	12.2	-0.3	11639.89	92298.8503	0.00036	0.03556
391	3.804	12.2	-0.3	11944.00	92298.8503	0.00034	0.03377
401	3.710	12.2	-0.3	12248.14	92298.8503	0.00032	0.03212
411	3.620	12.2	-0.3	12552.32	92298.8503	0.00031	0.03058
421	3.534	12.2	-0.3	12856.53	92298.8503	0.00029	0.02915
431	3.452	12.2	-0.3	13160.76	92298.8503	0.00028	0.02782
441	3.374	12.2	-0.3	13465.02	92298.8503	0.00027	0.02658
451	3.299	12.2	-0.3	13769.30	92298.8503	0.00025	0.02541
461	3.228	12.2	-0.3	14073.61	92298.8503	0.00024	0.02433
471	3.160	12.2	-0.3	14377.94	92298.8503	0.00023	0.02331
481	3.094	12.2	-0.3	14682.28	92298.8503	0.00022	0.02235
491	3.031	12.2	-0.3	14986.65	92298.8503	0.00021	0.02145
501	2.971	12.4	-0.1	15291.03	96648.7612	0.00022	0.02158
511	2.913	12.4	-0.1	15595.43	96648.7612	0.00021	0.02074
521	2.857	12.4	-0.1	15899.84	96648.7612	0.00020	0.01996
531	2.803	12.4	-0.1	16204.27	96648.7612	0.00019	0.01921
541	2.751	12.4	-0.1	16508.71	96648.7612	0.00019	0.01851
551	2.702	12.4	-0.1	16813.17	96648.7612	0.00018	0.01785
561	2.654	12.4	-0.1	17117.63	96648.7612	0.00017	0.01722
571	2.607	12.4	-0.1	17422.11	96648.7612	0.00017	0.01662
581	2.562	12.4	-0.1	17726.60	96648.7612	0.00016	0.01606
591	2.519	12.4	-0.1	18031.10	96648.7612	0.00016	0.01552
601	2.477	12.4	-0.1	18335.61	96648.7612	0.00015	0.01501
611	2.437	12.4	-0.1	18640.13	96648.7612	0.00015	0.01452
621	2.397	12.4	-0.1	18944.66	96648.7612	0.00014	0.01406
631	2.360	12.4	-0.1	19249.20	96648.7612	0.00014	0.01362
641	2.323	12.4	-0.1	19553.75	96648.7612	0.00013	0.01320
651	2.287	12.4	-0.1	19858.30	96648.7612	0.00013	0.01279
661	2.253	12.4	-0.1	20162.86	96648.7612	0.00012	0.01241
671	2.219	12.4	-0.1	20467.43	96648.7612	0.00012	0.01204
681	2.186	12.4	-0.1	20772.00	96648.7612	0.00012	0.01169
691	2.155	12.4	-0.1	21076.58	96648.7612	0.00011	0.01136

ARL	26	Max gain (dBd):	12.5	Max exposure:	0.00248673	mW/cm²

Max ERP (W): 98.9 **Ant type:** Andrew DB772G65ESXM **Feet from site:** 8

RF Exposure Level

Feet to Ant. base	Depress angle	Antenna gain	dB from max ERP	Prop dist in cm	Act ERP in mW	Level mW/cm²	Precent of FCC STD
701	2.124	12.4	-0.1	21381.17	96648.7612	0.00011	0.01104
711	2.094	12.4	-0.1	21685.76	96648.7612	0.00011	0.01073
721	2.065	12.4	-0.1	21990.36	96648.7612	0.00010	0.01043
731	2.037	12.4	-0.1	22294.97	96648.7612	0.00010	0.01015
741	2.010	12.4	-0.1	22599.58	96648.7612	0.00010	0.00988
751	1.983	12.5	0	22904.19	98900.0000	0.00010	0.00984
761	1.957	12.5	0	23208.81	98900.0000	0.00010	0.00958
771	1.931	12.5	0	23513.44	98900.0000	0.00009	0.00934
781	1.907	12.5	0	23818.07	98900.0000	0.00009	0.00910
791	1.883	12.5	0	24122.70	98900.0000	0.00009	0.00887
801	1.859	12.5	0	24427.34	98900.0000	0.00009	0.00865
811	1.836	12.5	0	24731.98	98900.0000	0.00008	0.00844
821	1.814	12.5	0	25036.63	98900.0000	0.00008	0.00824
831	1.792	12.5	0	25341.27	98900.0000	0.00008	0.00804
841	1.771	12.5	0	25645.93	98900.0000	0.00008	0.00785
851	1.750	12.5	0	25950.58	98900.0000	0.00008	0.00767
861	1.730	12.5	0	26255.24	98900.0000	0.00007	0.00749
871	1.710	12.5	0	26559.91	98900.0000	0.00007	0.00732
881	1.690	12.5	0	26864.57	98900.0000	0.00007	0.00715
891	1.671	12.5	0	27169.24	98900.0000	0.00007	0.00699
901	1.653	12.5	0	27473.91	98900.0000	0.00007	0.00684
911	1.635	12.5	0	27778.59	98900.0000	0.00007	0.00669
921	1.617	12.5	0	28083.26	98900.0000	0.00007	0.00655
931	1.600	12.5	0	28387.94	98900.0000	0.00006	0.00641
941	1.583	12.5	0	28692.63	98900.0000	0.00006	0.00627
951	1.566	12.5	0	28997.31	98900.0000	0.00006	0.00614
961	1.550	12.5	0	29302.00	98900.0000	0.00006	0.00601
971	1.534	12.5	0	29606.69	98900.0000	0.00006	0.00589
981	1.518	12.5	0	29911.38	98900.0000	0.00006	0.00577
991	1.503	12.5	0	30216.07	98900.0000	0.00006	0.00565
1001	1.488	12.5	0	30520.77	98900.0000	0.00006	0.00554
1011	1.473	12.5	0	30825.47	98900.0000	0.00005	0.00543
1021	1.459	12.5	0	31130.17	98900.0000	0.00005	0.00533
1031	1.445	12.5	0	31434.87	98900.0000	0.00005	0.00522

STATEMENT OF EXPERIENCE

Jerrold Talmadge Bushberg, Ph.D., DABMP, DABSNM
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Dr. Jerrold Bushberg has performed health and safety analysis for RF & ELF transmissions systems since 1978 and is an expert in both health physics and medical physics. The scientific discipline of Health Physics is devoted to radiation protection, which, among other things, involves providing analysis of radiation exposure conditions, biological effects research, regulations and standards as well as recommendations regarding the use and safety of ionizing and non-ionizing radiation. In addition, Dr. Bushberg has extensive experience and lectures on several related topics including medical physics, radiation protection, (ionizing and non-ionizing), radiation biology, the science of risk assessment and effective risk communication in the public sector.

Dr. Bushberg's doctoral dissertation at Purdue University was on various aspects of the biological effects of microwave radiation. He has maintained a strong professional involvement in this subject and has served as consultant or appeared as an expert witness on this subject to a wide variety of organizations/institutions including, local governments, school districts, city planning departments, telecommunications companies, the California Public Utilities Commission, national news organizations, and the U.S. Congress. In addition, his consultation services have included detailed computer based modeling of RF exposures as well as on-site safety inspections and RF & ELF environmental field measurements of numerous transmission facilities in order to determine their compliance with FCC and other safety regulations. The consultation services provided by Dr. Bushberg are based on his professional judgement as an independent scientist, however they are not intended to necessarily represent the views of any other organization.

Dr. Bushberg is a member of the main scientific body of International Committee on Electromagnetic Safety (ICES) which reviews and evaluates the scientific literature on the biological effects of non-ionizing electromagnetic radiation and establishes exposure standards. He also serves on the ICES Risk Assessment Working Group that is responsible for evaluating and characterizing the risks of non-ionizing electromagnetic radiation. Dr. Bushberg was appointed and is serving as a member of the main scientific council of the National Council on Radiation Protection and Measurement's (NCRP). He is also a Scientific Vice-President of the NCRP, a member of the NCRP Board of Directors and chairs its committee on Radiation Protection in Medicine. In addition, Dr. Bushberg is a member of NCRP's scientific advisory committee on Non-ionizing Radiation Safety. The NCRP is the nation's preeminent scientific radiation protection organization, chartered by Congress to evaluate and provide expert consultation on a wide variety of radiological health issues. The current FCC RF exposure safety standards are based in large part on the recommendations of the NCRP. Dr. Bushberg was elected to the International Engineering in Medicine and Biology Society Committee on Man and Radiation (COMAR) which has as its primary area of responsibility the examination and interpreting the biological effects of non-ionizing electromagnetic energy and presenting its findings in an authoritative and professional manner. Dr. Bushberg is also a member of a six person U.S. expert delegation to the international scientific community on Scientific and Technical Issues for Mobile Communication Systems established by the Federal Communications Commission.

Dr. Bushberg is a full member of the Bioelectromagnetics Society, the Health Physics Society and the Radiation Research Society. Dr. Bushberg received both a Masters of Science and Ph.D. from the Department of Bionucleonics at Purdue University. Dr. Bushberg is certified by several national professional boards with specific sub-specialty certification in radiation protection and medical physics. Prior to coming to California, Dr. Bushberg was on the faculty of Yale University School of Medicine.